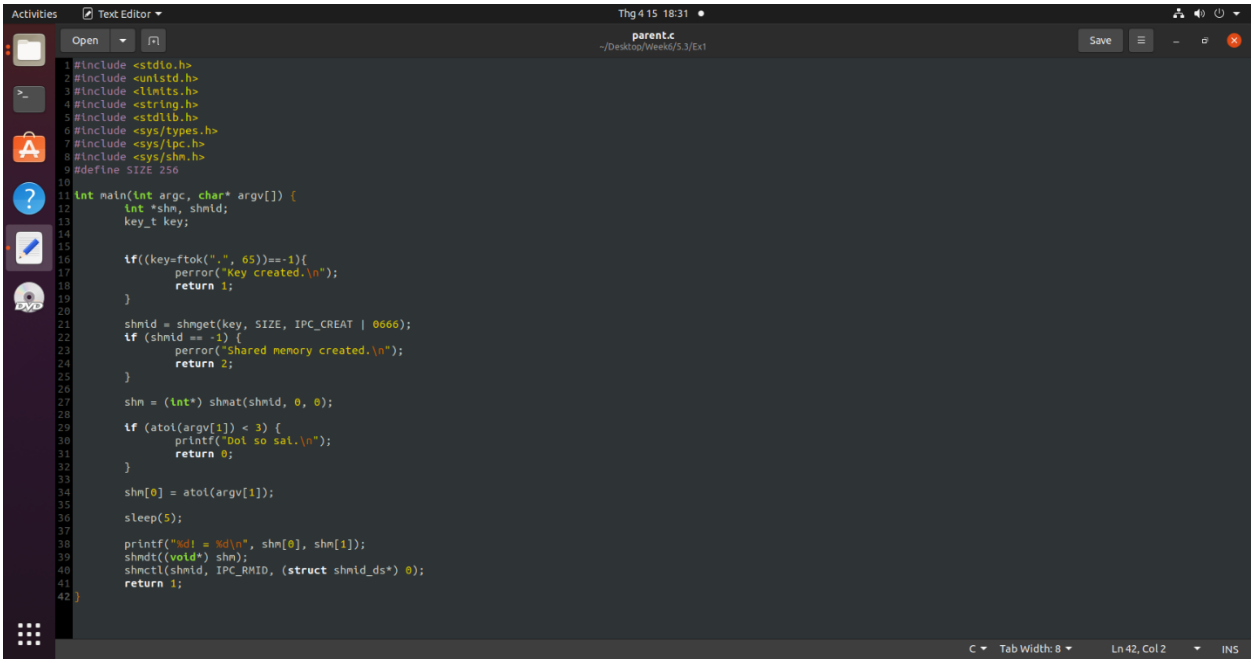
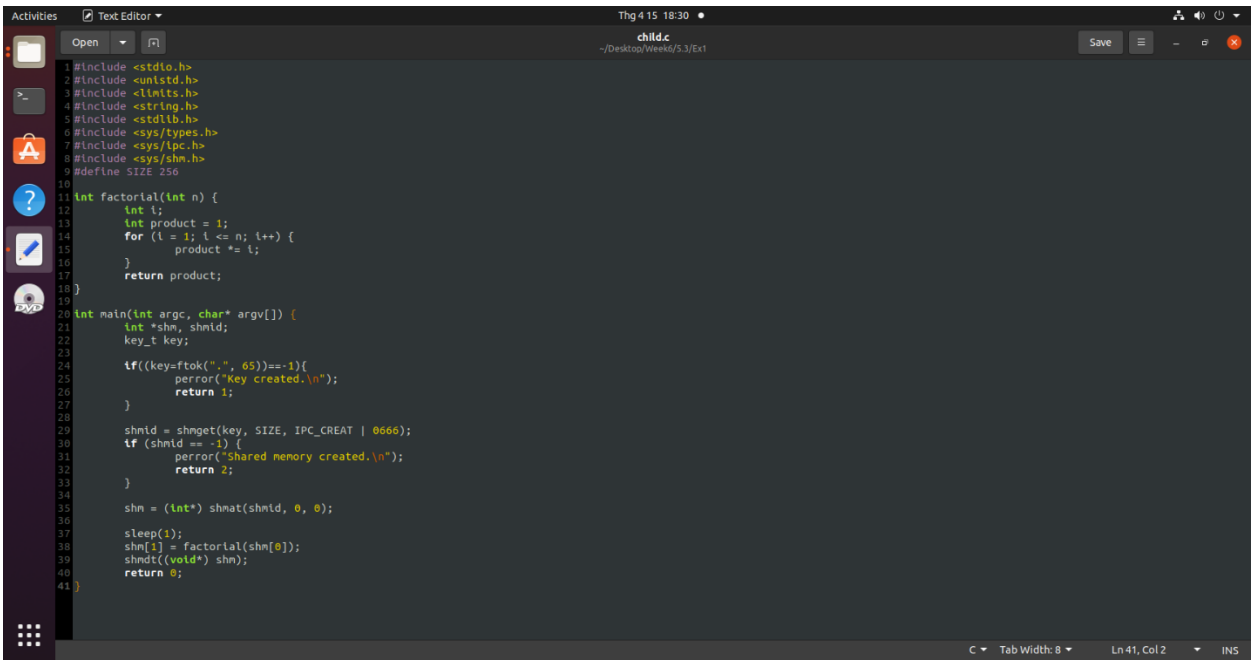
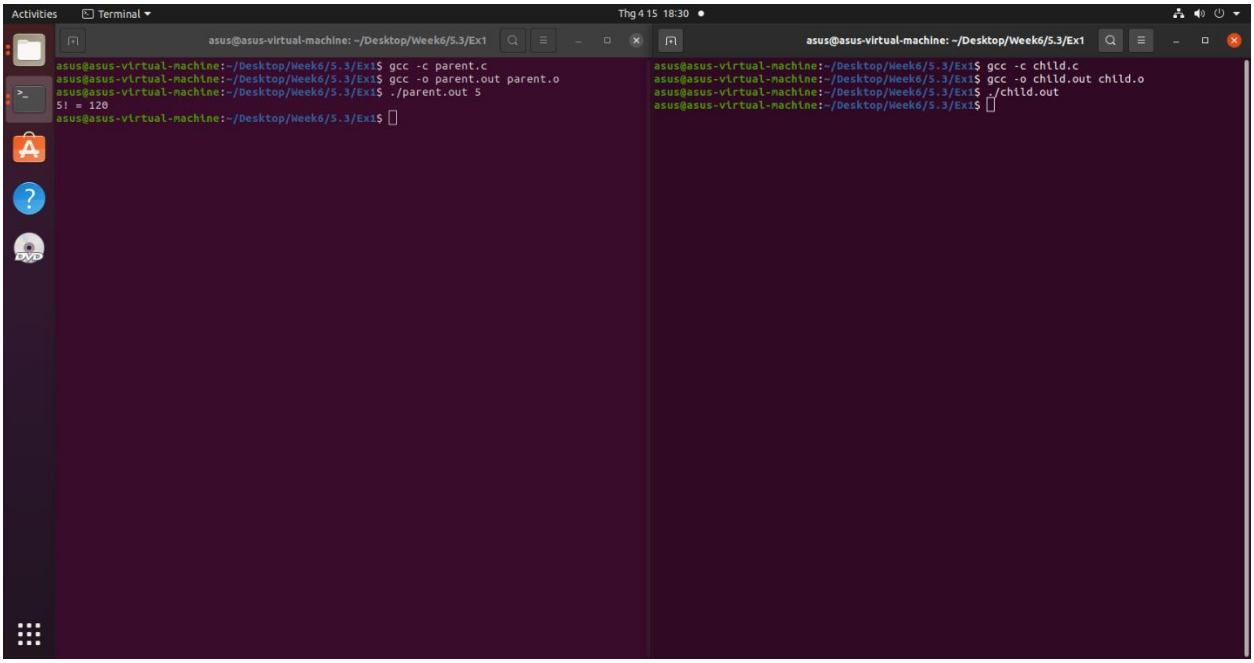
TUẦN 6

5.3 – Vùng nhớ chia sẻ

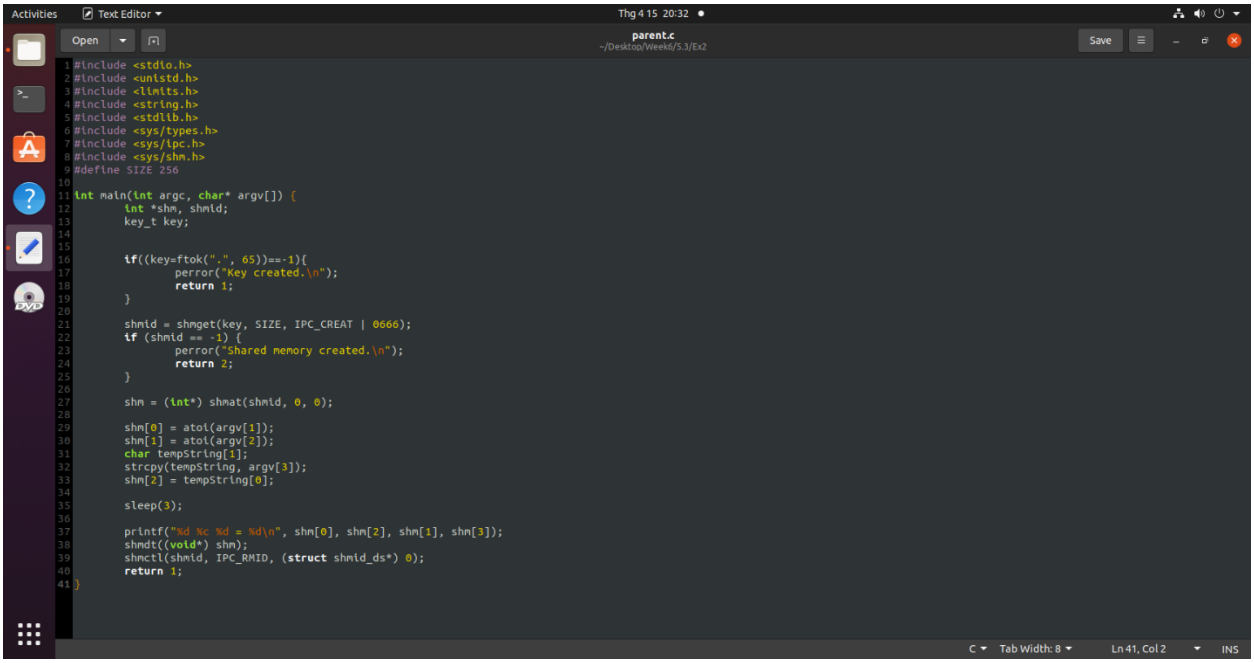
Bài 1:



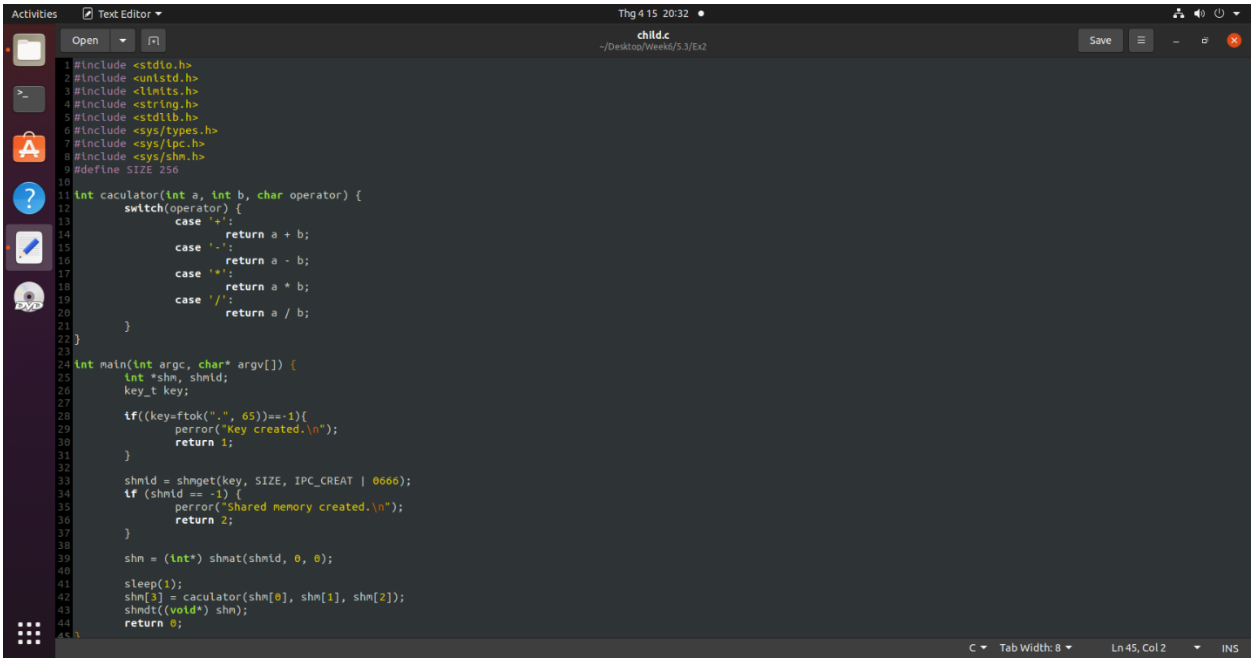



Activities
Terminal
Thg 4 15 18:30
asus@asus-virtual-machine: ~/Desktop/Week6/5.3/Ex1
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex1$ gcc -c parent.c
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex1$ gcc -o parent.out parent.o
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex1$ ./parent.out 5
5! = 120
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex1$
asus@asus-virtual-machine: ~/Desktop/Week6/5.3/Ex1
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex1$ gcc -c child.c
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex1$ gcc -o child.out child.o
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex1$ ./child.out
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex1$

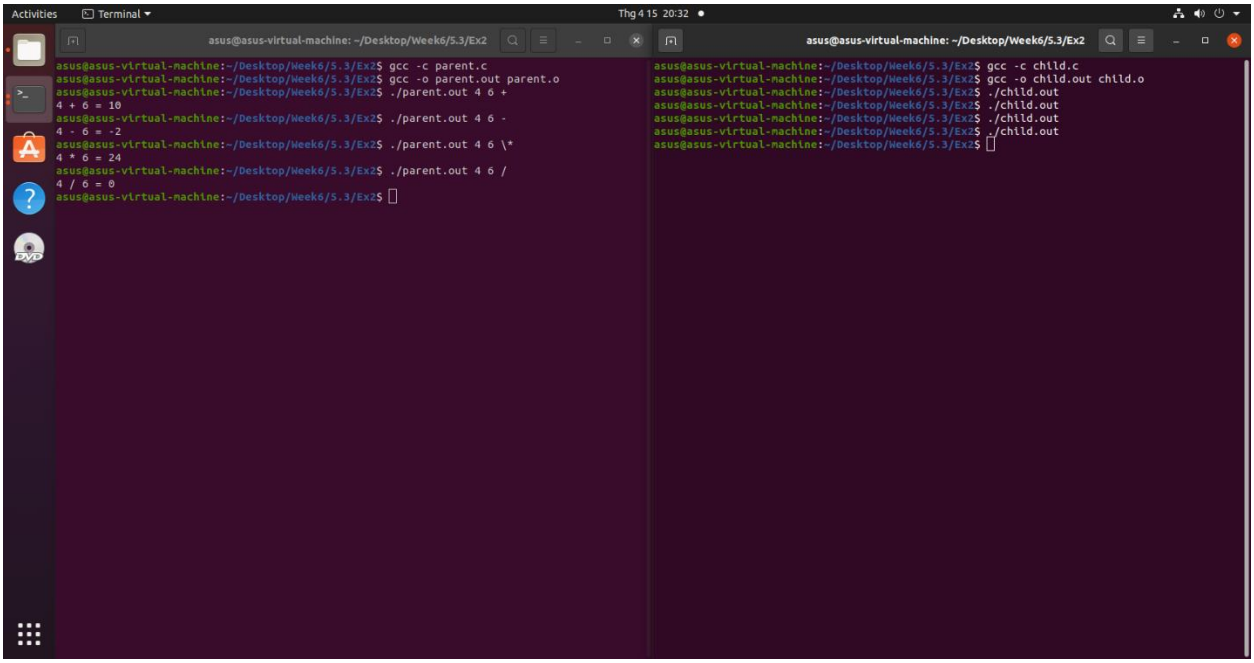
Bài 2:



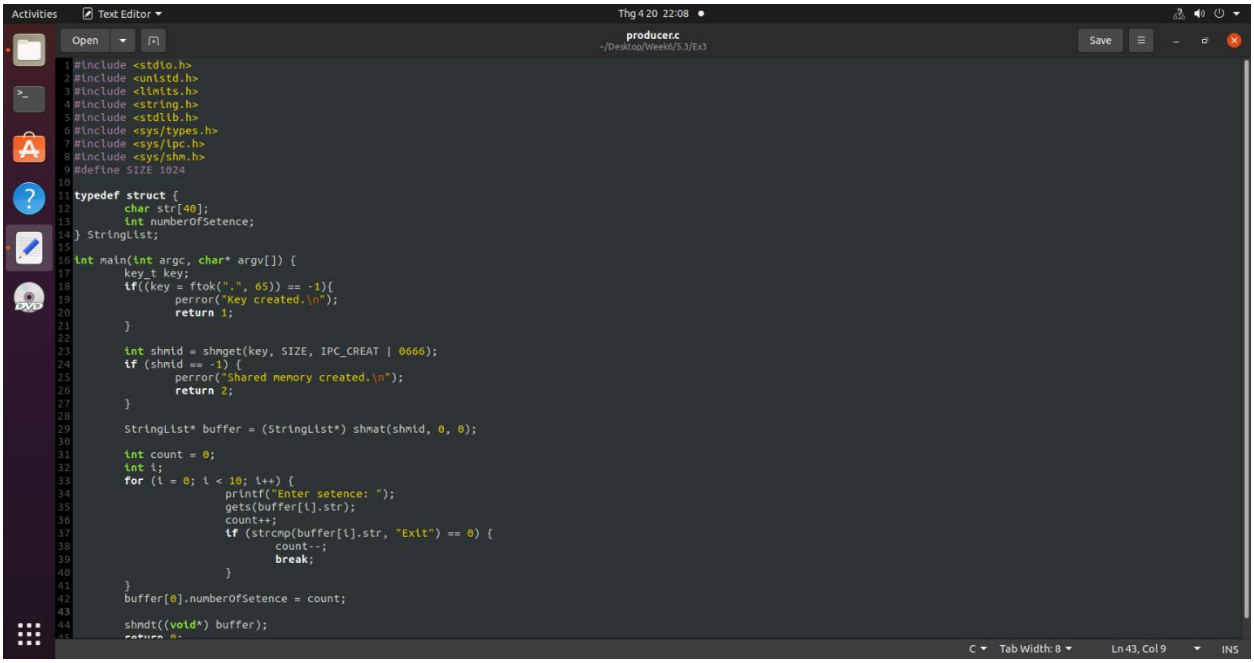

```c
#include <stdio.h>
#include <unistd.h>
#include <limits.h>
#include <string.h>
#include <stdlib.h>
#include <sys/types.h>
#include <sys/ipc.h>
#include <sys/shm.h>
#define SIZE 256

int main(int argc, char* argv[]) {
        int *shm, shmid;
        key_t key;


        if((key=ftok(".", 65))==-1){
                perror("Key created.\n");
                return 1;
        }

        shmid = shmget(key, SIZE, IPC_CREAT | 0666);
        if (shmid == -1) {
                perror("Shared memory created.\n");
                return 2;
        }

        shm = (int*) shmat(shmid, 0, 0);

        shm[0] = atoi(argv[1]);
        shm[1] = atoi(argv[2]);
        char tempString[1];
        strcpy(tempString, argv[3]);
        shm[2] = tempString[0];

        sleep(3);

        printf("%d %c %d = %d\n", shm[0], shm[2], shm[1], shm[3]);
        shmdt((void*) shm);
        shmctl(shmid, IPC_RMID, (struct shmid_ds*) 0);
        return 1;
}
```



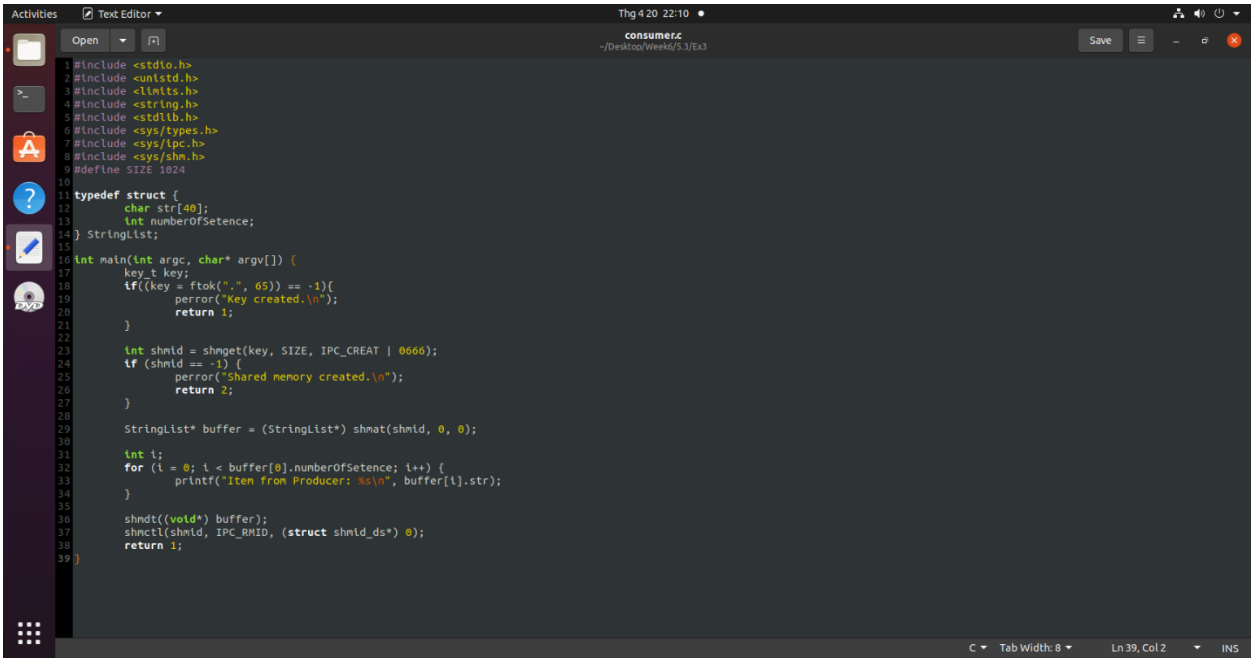

```c
#include <stdio.h>
#include <unistd.h>
#include <limits.h>
#include <string.h>
#include <stdlib.h>
#include <sys/types.h>
#include <sys/ipc.h>
#include <sys/shm.h>
#define SIZE 256

int caculator(int a, int b, char operator) {
        switch(operator) {
                case '+':
                        return a + b;
                case '-':
                        return a - b;
                case '*':
                        return a * b;
                case '/':
                        return a / b;
        }
}

int main(int argc, char* argv[]) {
        int *shm, shmid;
        key_t key;

        if((key=ftok(".", 65))==-1){
                perror("Key created.\n");
                return 1;
        }

        shmid = shmget(key, SIZE, IPC_CREAT | 0666);
        if (shmid == -1) {
                perror("Shared memory created.\n");
                return 2;
        }

        shm = (int*) shmat(shmid, 0, 0);

        sleep(1);
        shm[3] = caculator(shm[0], shm[1], shm[2]);
        shmdt((void*) shm);
        return 0;
}
```


Activities
Terminal
Thg 4 15 20:32
asus@asus-virtual-machine: ~/Desktop/Week6/5.3/Ex2
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex2$ gcc -c parent.c
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex2$ gcc -o parent.out parent.o
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex2$ ./parent.out 4 6 +
4 + 6 = 10
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex2$ ./parent.out 4 6 -
4 - 6 = -2
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex2$ ./parent.out 4 6 *
4 * 6 = 24
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex2$ ./parent.out 4 6 /
4 / 6 = 0
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex2$
asus@asus-virtual-machine: ~/Desktop/Week6/5.3/Ex2
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex2$ gcc -c child.c
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex2$ gcc -o child.out child.o
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex2$ ./child.out
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex2$ ./child.out
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex2$ ./child.out
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex2$ ./child.out
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex2$

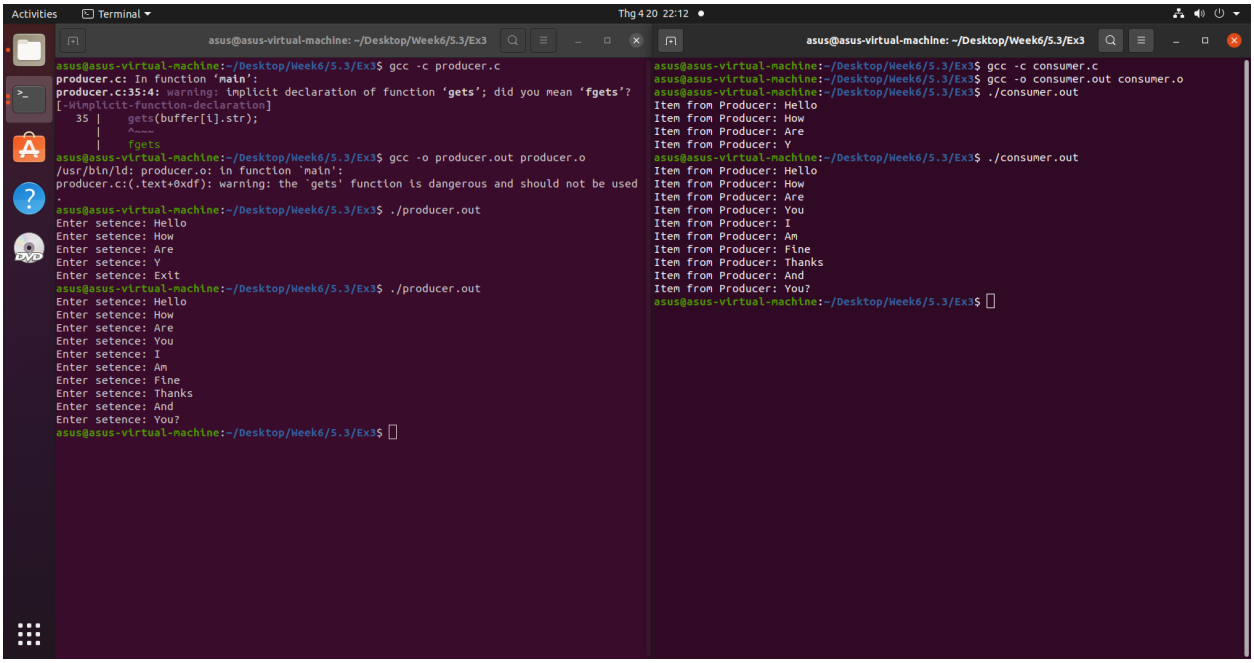
Bài 3:



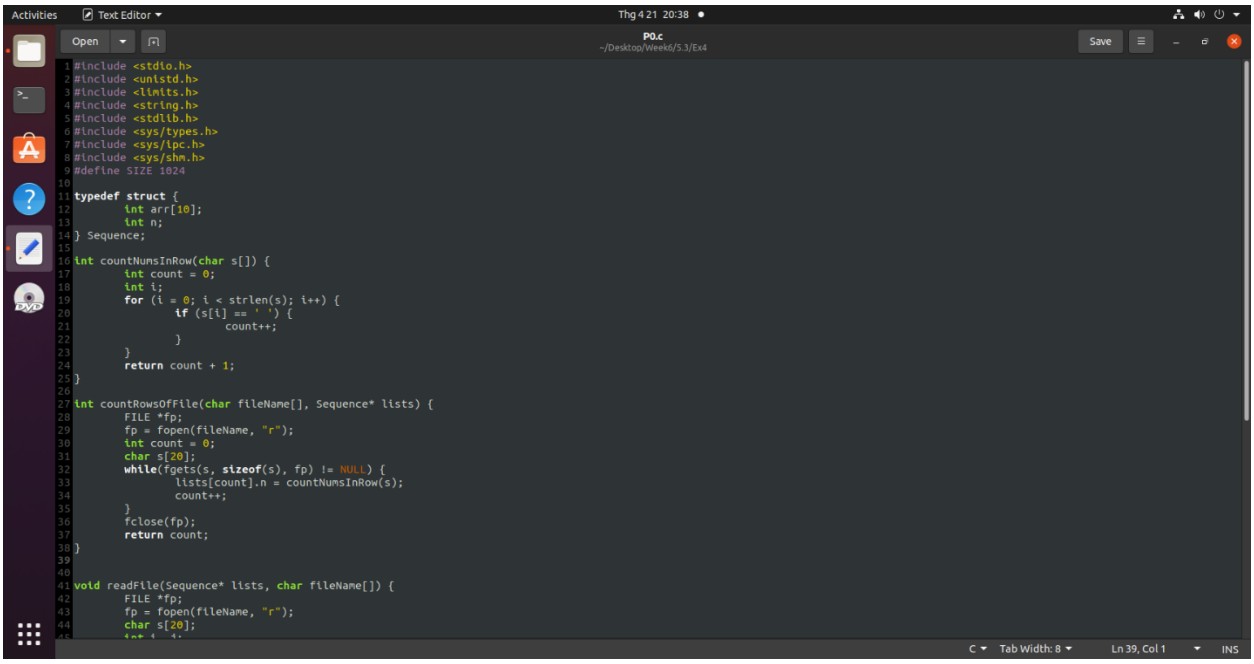

```c
#include <stdio.h>
#include <unistd.h>
#include <limits.h>
#include <string.h>
#include <stdlib.h>
#include <sys/types.h>
#include <sys/ipc.h>
#include <sys/shm.h>
#define SIZE 1024

typedef struct {
        char str[40];
        int numberOfSetence;
} StringList;

int main(int argc, char* argv[]) {
        key_t key;
        if((key = ftok(".", 65)) == -1){
                perror("Key created.\n");
                return 1;
        }

        int shmid = shmget(key, SIZE, IPC_CREAT | 0666);
        if (shmid == -1) {
                perror("Shared memory created.\n");
                return 2;
        }

        StringList* buffer = (StringList*) shmat(shmid, 0, 0);

        int count = 0;
        int i;
        for (i = 0; i < 10; i++) {
                        printf("Enter setence: ");
                        gets(buffer[i].str);
                        count++;
                        if (strcmp(buffer[i].str, "Exit") == 0) {
                                count--;
                                break;
                        }
        }
        buffer[0].numberOfSetence = count;

        shmdt((void*) buffer);
```



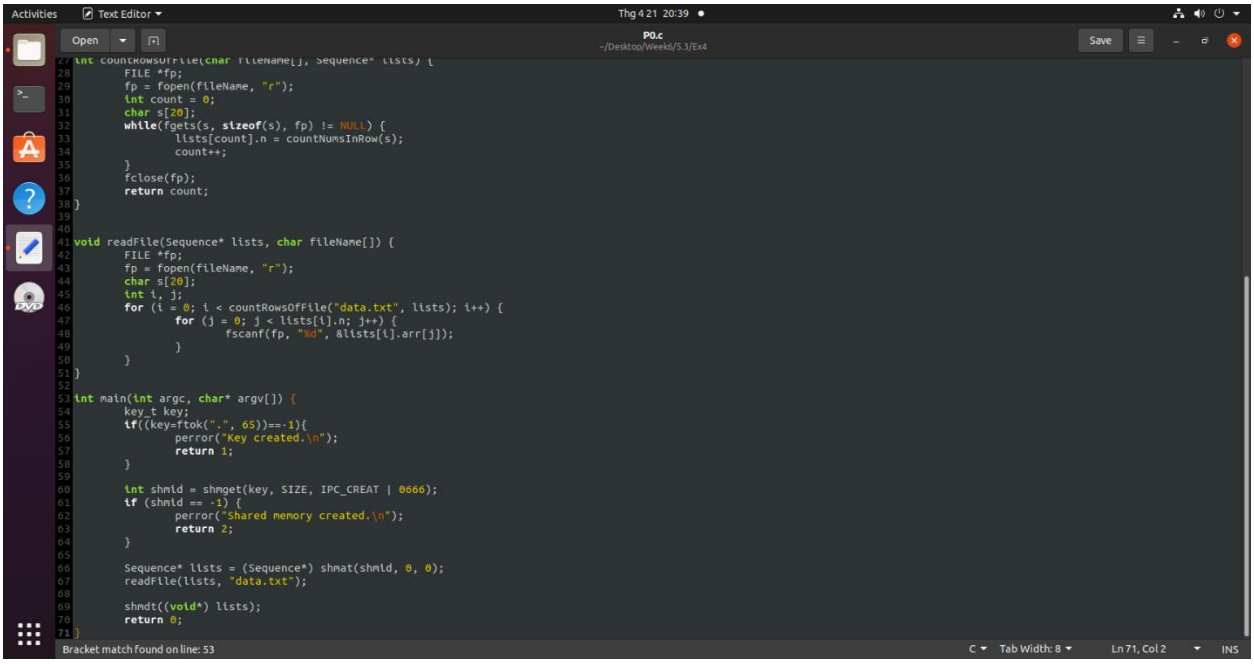

```c
#include <stdio.h>
#include <unistd.h>
#include <limits.h>
#include <string.h>
#include <stdlib.h>
#include <sys/types.h>
#include <sys/ipc.h>
#include <sys/shm.h>
#define SIZE 1024

typedef struct {
        char str[40];
        int numberOfSetence;
} StringList;

int main(int argc, char* argv[]) {
        key_t key;
        if((key = ftok(".", 65)) == -1){
                perror("Key created.\n");
                return 1;
        }

        int shmid = shmget(key, SIZE, IPC_CREAT | 0666);
        if (shmid == -1) {
                perror("Shared memory created.\n");
                return 2;
        }

        StringList* buffer = (StringList*) shmat(shmid, 0, 0);

        int i;
        for (i = 0; i < buffer[0].numberOfSetence; i++) {
                printf("Item from Producer: %s\n", buffer[i].str);
        }

        shmdt((void*) buffer);
        shmctl(shmid, IPC_RMID, (struct shmid_ds*) 0);
        return 1;
}
```


Activities
Terminal
Thg 4 20 22:12
asus@asus-virtual-machine: ~/Desktop/Week6/5.3/Ex3
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex3$ gcc -c producer.c
producer.c: In function 'main':
producer.c:35:4: warning: implicit declaration of function 'gets'; did you mean 'fgets'?
[-Wimplicit-function-declaration]
35 | gets(buffer[i].str);
| ^~~~
| fgets
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex3$ gcc -o producer.out producer.o
/usr/bin/ld: producer.o: in function `main':
producer.c:(.text+0xdf): warning: the `gets' function is dangerous and should not be used
.
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex3$ ./producer.out
Enter setence: Hello
Enter setence: How
Enter setence: Are
Enter setence: Y
Enter setence: Exit
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex3$ ./producer.out
Enter setence: Hello
Enter setence: How
Enter setence: Are
Enter setence: You
Enter setence: I
Enter setence: Am
Enter setence: Fine
Enter setence: Thanks
Enter setence: And
Enter setence: You?
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex3$
asus@asus-virtual-machine: ~/Desktop/Week6/5.3/Ex3
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex3$ gcc -c consumer.c
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex3$ gcc -o consumer.out consumer.o
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex3$ ./consumer.out
Item from Producer: Hello
Item from Producer: How
Item from Producer: Are
Item from Producer: Y
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex3$ ./consumer.out
Item from Producer: Hello
Item from Producer: How
Item from Producer: Are
Item from Producer: You
Item from Producer: I
Item from Producer: Am
Item from Producer: Fine
Item from Producer: Thanks
Item from Producer: And
Item from Producer: You?
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex3$

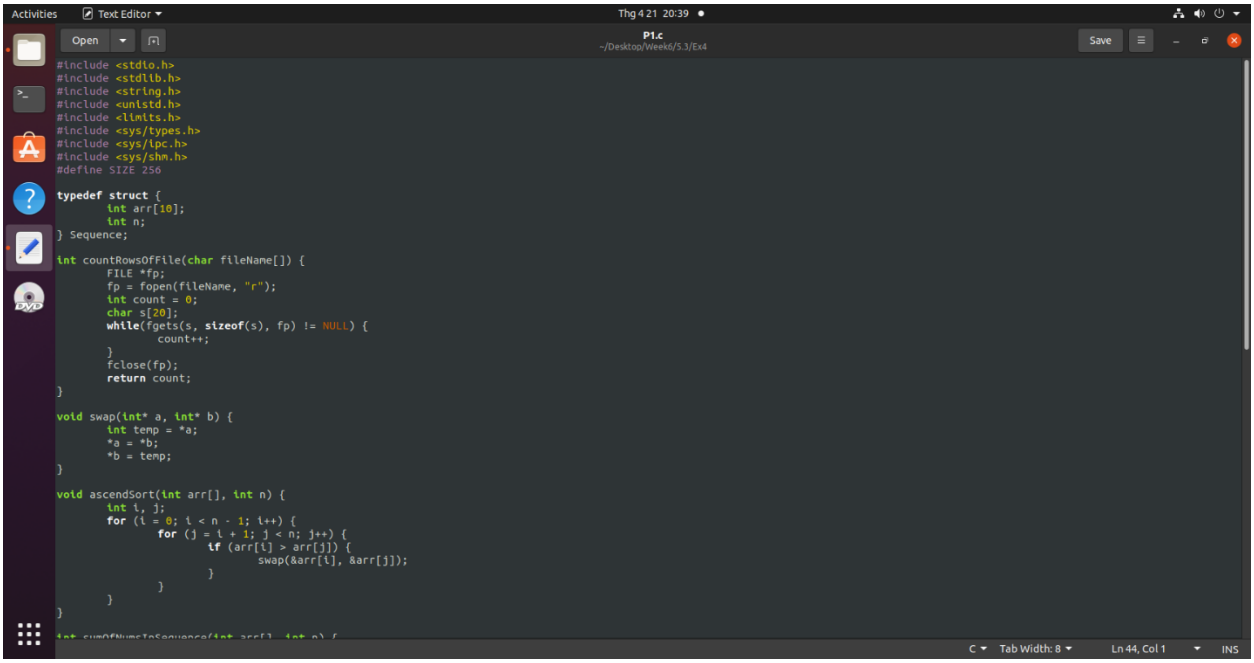
Bài 4:

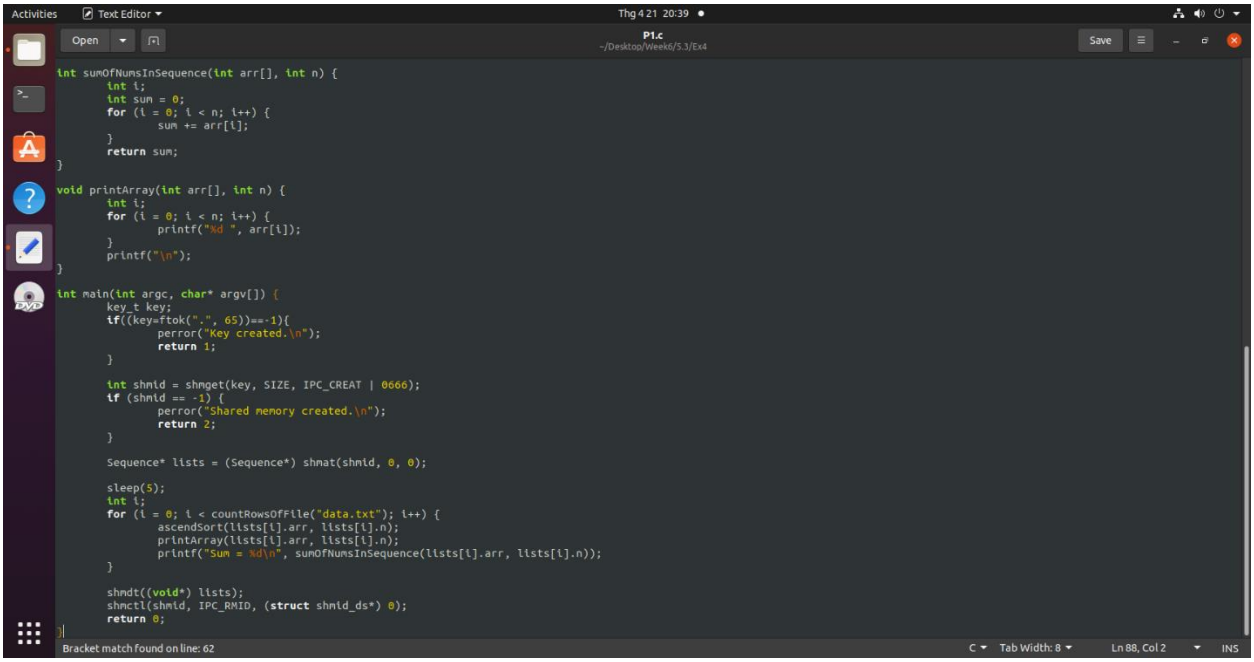


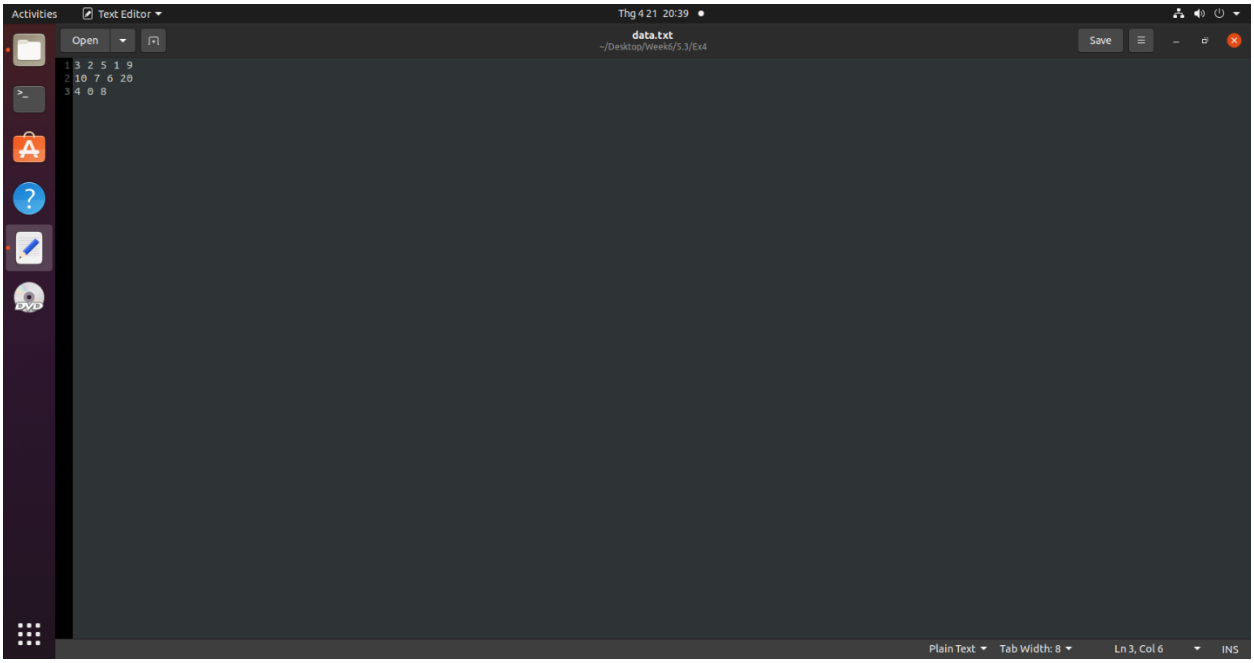

```c
#include <stdio.h>
#include <unistd.h>
#include <limits.h>
#include <string.h>
#include <stdlib.h>
#include <sys/types.h>
#include <sys/ipc.h>
#include <sys/shm.h>
#define SIZE 1024

typedef struct {
        int arr[10];
        int n;
} Sequence;

int countNumsInRow(char s[]) {
        int count = 0;
        int i;
        for (i = 0; i < strlen(s); i++) {
                if (s[i] == ' ') {
                        count++;
                }
        }
        return count + 1;
}

int countRowsOfFile(char fileName[], Sequence* lists) {
        FILE *fp;
        fp = fopen(fileName, "r");
        int count = 0;
        char s[20];
        while(fgets(s, sizeof(s), fp) != NULL) {
                lists[count].n = countNumsInRow(s);
                count++;
        }
        fclose(fp);
        return count;
}


void readFile(Sequence* lists, char fileName[]) {
        FILE *fp;
        fp = fopen(fileName, "r");
        char s[20];
```

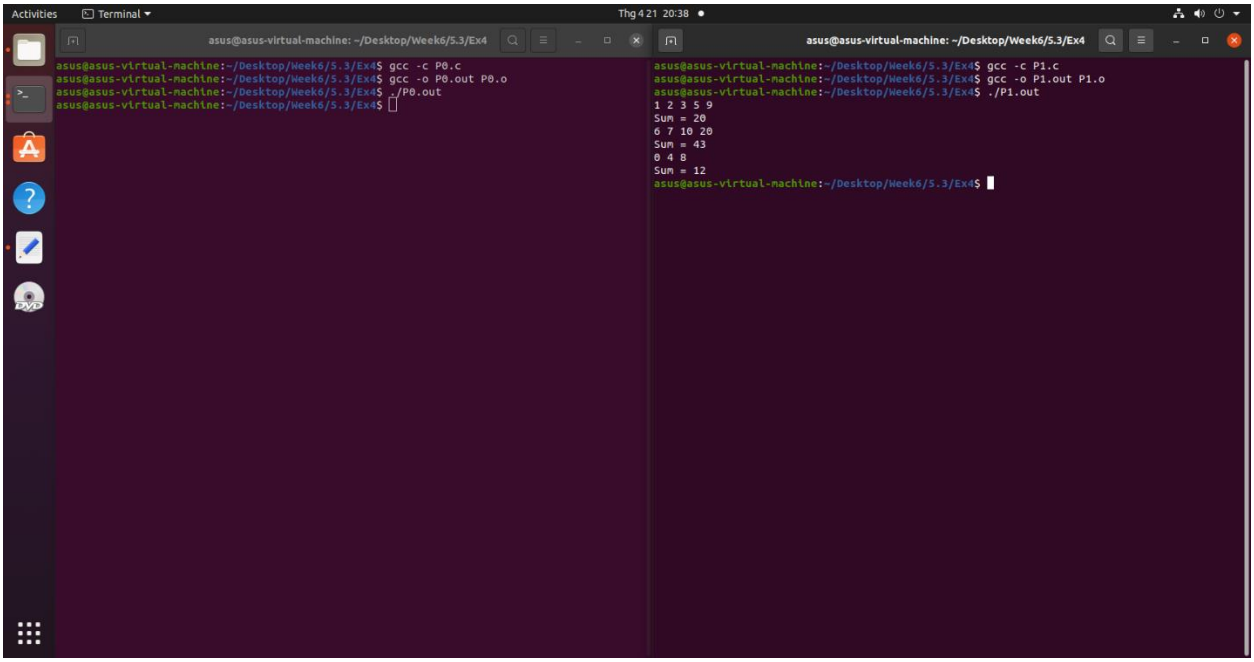



```c
int countRowsOfFile(char fileName[], Sequence* lists) {
        FILE *fp;
        fp = fopen(fileName, "r");
        int count = 0;
        char s[20];
        while(fgets(s, sizeof(s), fp) != NULL) {
                lists[count].n = countNumsInRow(s);
                count++;
        }
        fclose(fp);
        return count;
}


void readFile(Sequence* lists, char fileName[]) {
        FILE *fp;
        fp = fopen(fileName, "r");
        char s[20];
        int i, j;
        for (i = 0; i < countRowsOfFile("data.txt", lists); i++) {
                for (j = 0; j < lists[i].n; j++) {
                        fscanf(fp, "%d", &lists[i].arr[j]);
                }
        }
}

int main(int argc, char* argv[]) {
        key_t key;
        if((key=ftok(".", 65))==-1){
                perror("Key created.\n");
                return 1;
        }

        int shmid = shmget(key, SIZE, IPC_CREAT | 0666);
        if (shmid == -1) {
                perror("Shared memory created.\n");
                return 2;
        }

        Sequence* lists = (Sequence*) shmat(shmid, 0, 0);
        readFile(lists, "data.txt");

        shmdt((void*) lists);
        return 0;
}
```


Activities
Text Editor
Thg 4 21 20:39
Open
P1.c
~/Desktop/Week6/5.3/Ex4
Save
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <unistd.h>
#include <limits.h>
#include <sys/types.h>
#include <sys/ipc.h>
#include <sys/shm.h>
#define SIZE 256
typedef struct {
int arr[10];
int n;
} Sequence;
int countRowsOfFile(char fileName[]) {
FILE *fp;
fp = fopen(fileName, "r");
int count = 0;
char s[20];
while(fgets(s, sizeof(s), fp) != NULL) {
count++;
}
fclose(fp);
return count;
}
void swap(int* a, int* b) {
int temp = *a;
*a = *b;
*b = temp;
}
void ascendSort(int arr[], int n) {
int i, j;
for (i = 0; i < n - 1; i++) {
for (j = i + 1; j < n; j++) {
if (arr[i] > arr[j]) {
swap(&arr[i], &arr[j]);
}
}
}
}
C
Tab Width: 8
Ln 44, Col 1
INS

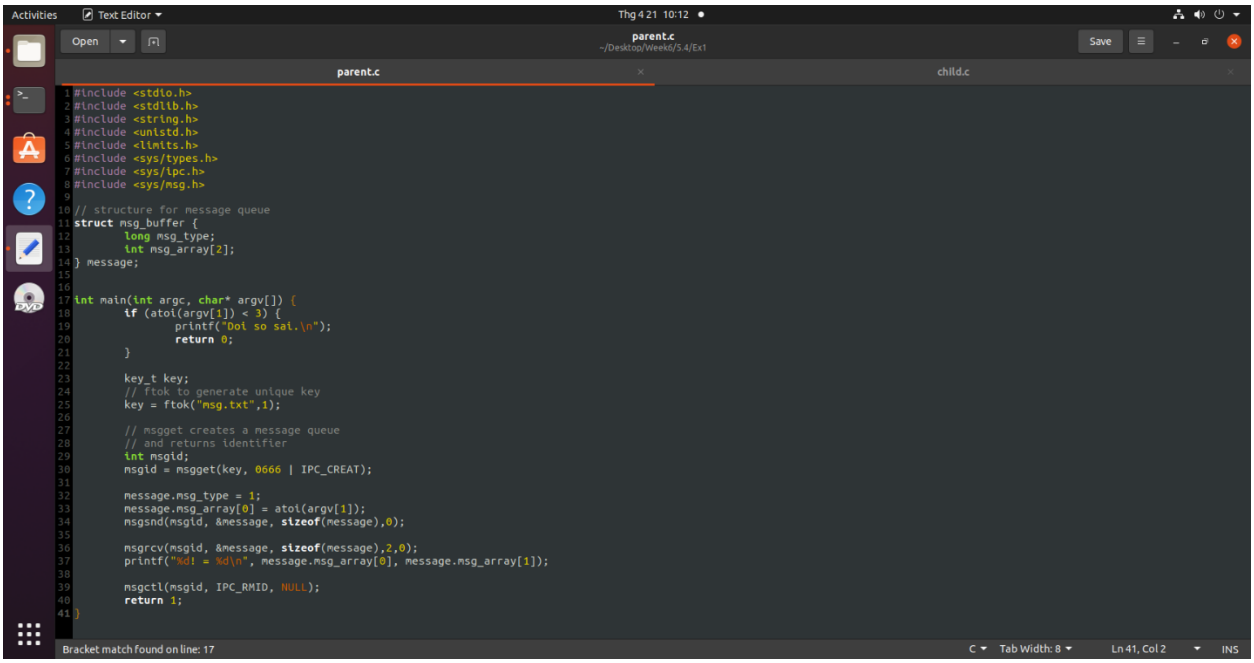

Activities
Text Editor
Thg 4 21 20:39
Open
P1.c
~/Desktop/Week6/5.3/Ex4
Save
int sumOfNumsInSequence(int arr[], int n) {
int i;
int sum = 0;
for (i = 0; i < n; i++) {
sum += arr[i];
}
return sum;
}
void printArray(int arr[], int n) {
int i;
for (i = 0; i < n; i++) {
printf("%d ", arr[i]);
}
printf("\n");
}
int main(int argc, char* argv[]) {
key_t key;
if((key=ftok(".", 65))==-1){
perror("Key created.\n");
return 1;
}
int shmid = shmget(key, SIZE, IPC_CREAT | 0666);
if (shmid == -1) {
perror("Shared memory created.\n");
return 2;
}
Sequence* lists = (Sequence*) shmat(shmid, 0, 0);
sleep(5);
int i;
for (i = 0; i < countRowsOfFile("data.txt"); i++) {
ascendSort(lists[i].arr, lists[i].n);
printArray(lists[i].arr, lists[i].n);
printf("Sum = %d\n", sumOfNumsInSequence(lists[i].arr, lists[i].n));
}
shmdt((void*) lists);
shmctl(shmid, IPC_RMID, (struct shmid_ds*) 0);
return 0;
}
Bracket match found on line: 62
C
Tab Width: 8
Ln 88, Col 2
INS

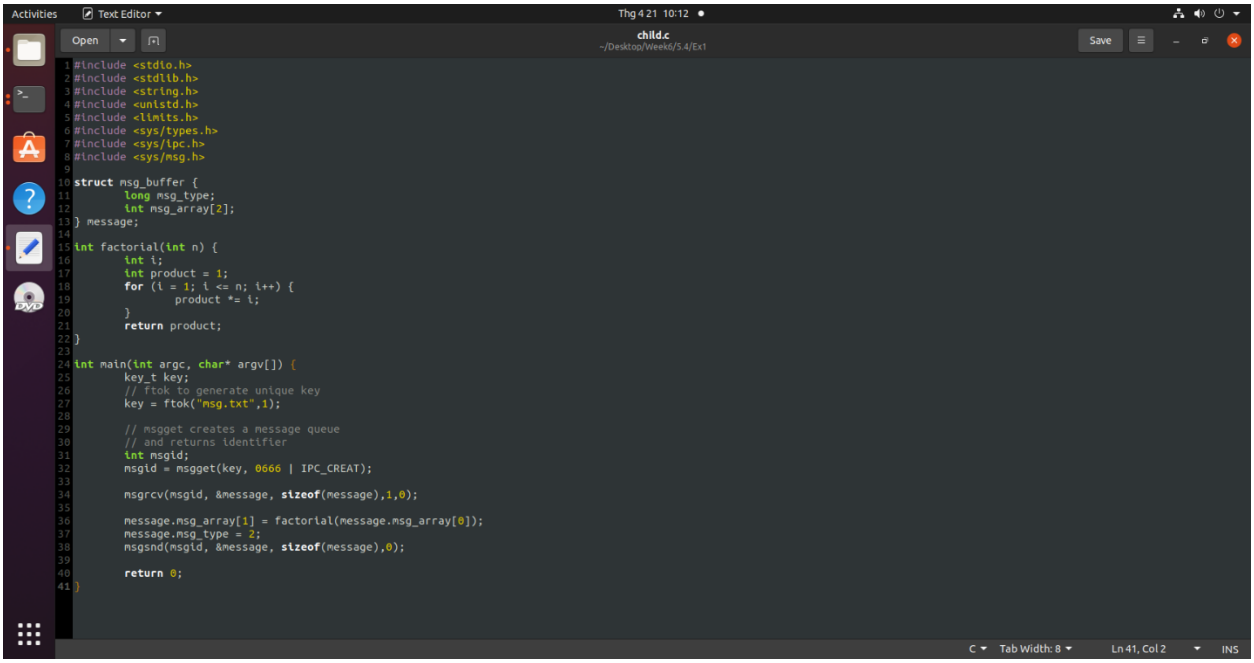

Activities
Text Editor
Thg 4 21 20:39
Open
data.txt
~/Desktop/Week6/5.3/Ex4
Save
3 2 5 1 9
10 7 6 20
4 0 8
Plain Text
Tab Width: 8
Ln 3, Col 6
INS

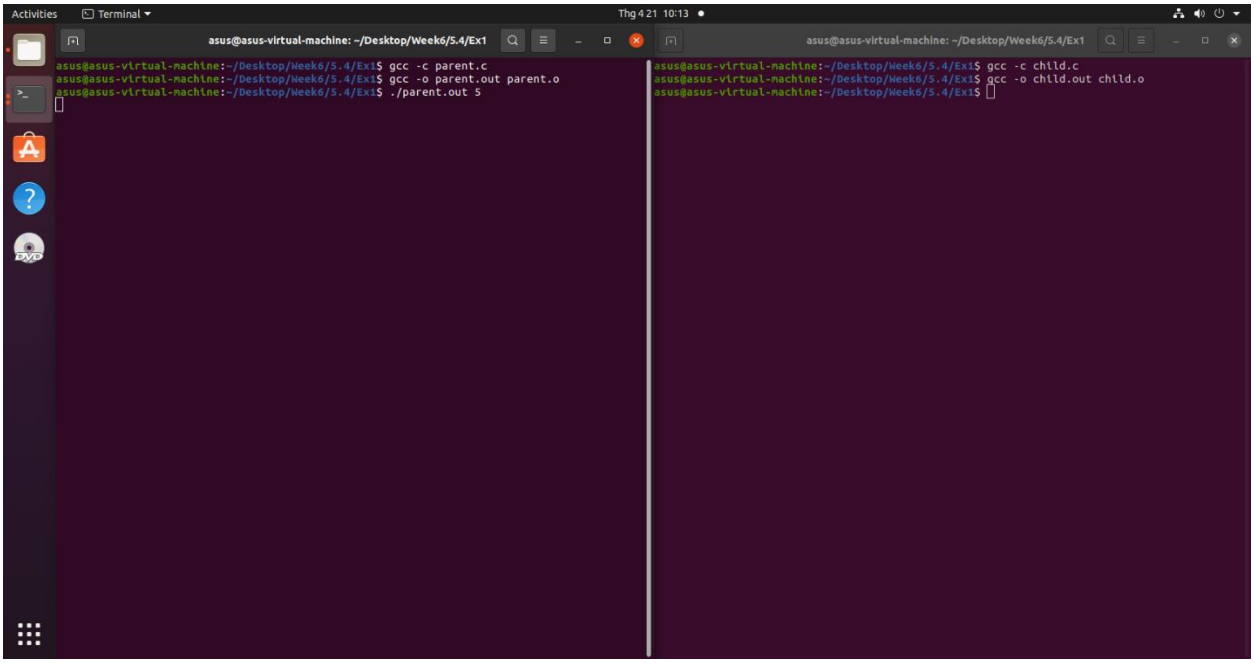

Activities
Terminal
Thg 4 21 20:38
asus@asus-virtual-machine: ~/Desktop/Week6/5.3/Ex4
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex4$ gcc -c P0.c
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex4$ gcc -o P0.out P0.o
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex4$ ./P0.out
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex4$
asus@asus-virtual-machine: ~/Desktop/Week6/5.3/Ex4
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex4$ gcc -c P1.c
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex4$ gcc -o P1.out P1.o
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex4$ ./P1.out
1 2 3 5 9
Sum = 20
6 7 10 20
Sum = 43
0 4 8
Sum = 12
asus@asus-virtual-machine:~/Desktop/Week6/5.3/Ex4$

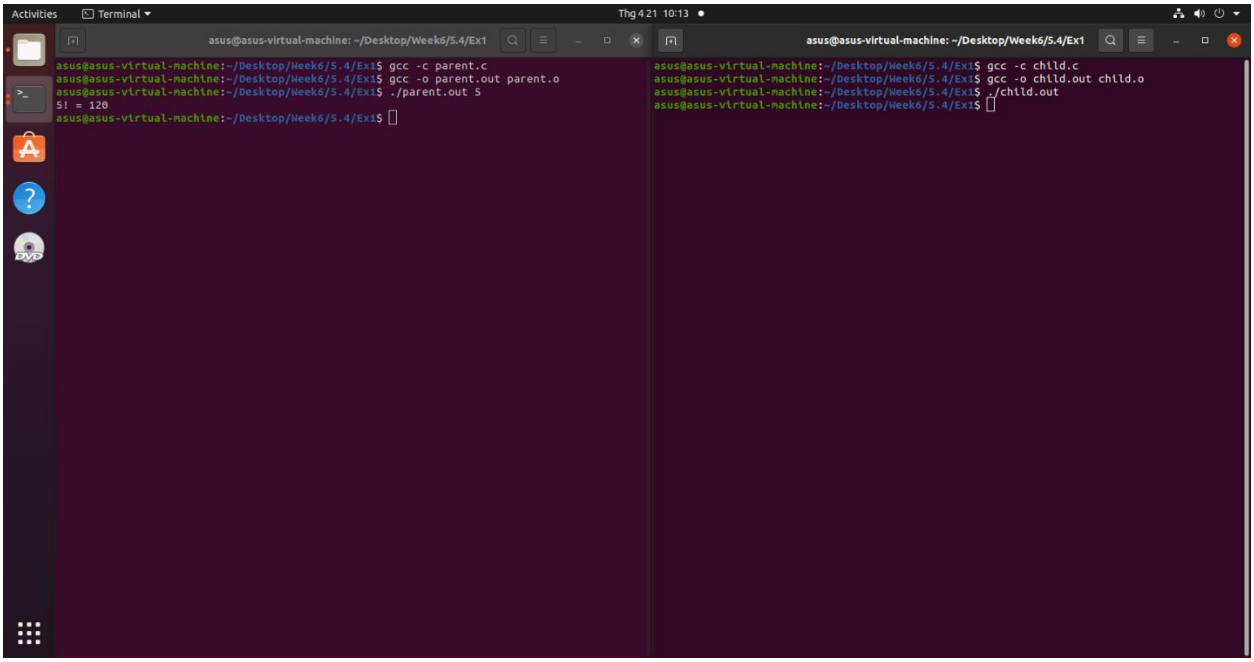
5.4 – Hàng đợi thông điệp

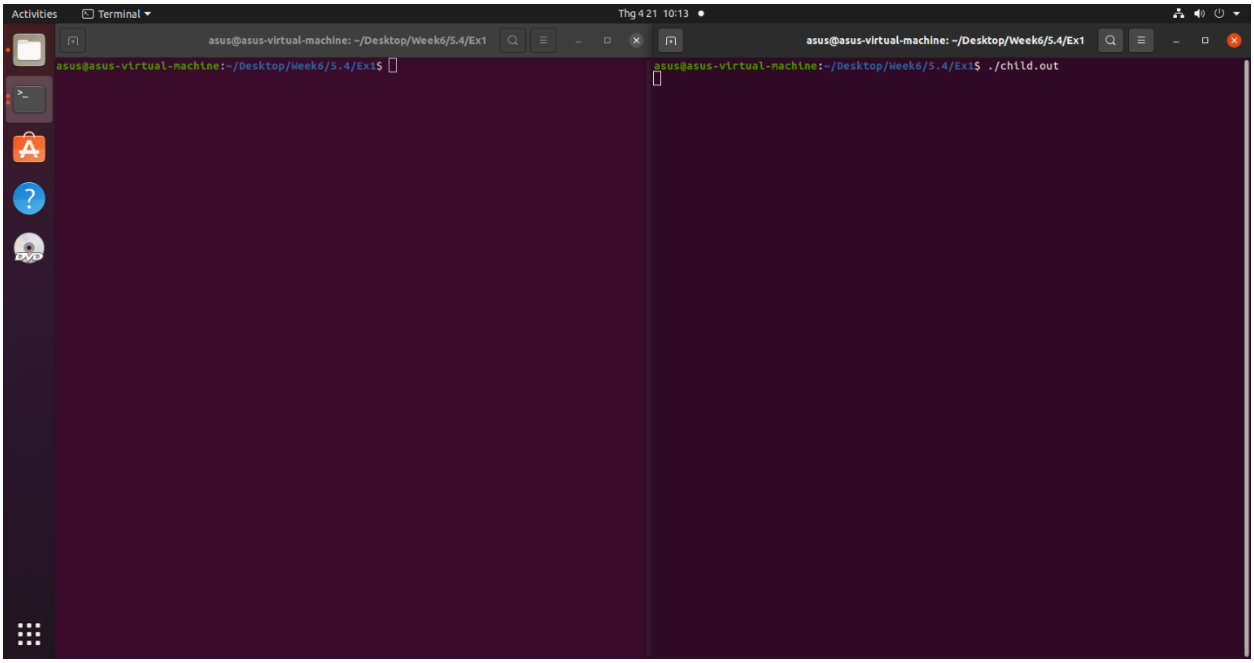
Bài 1:

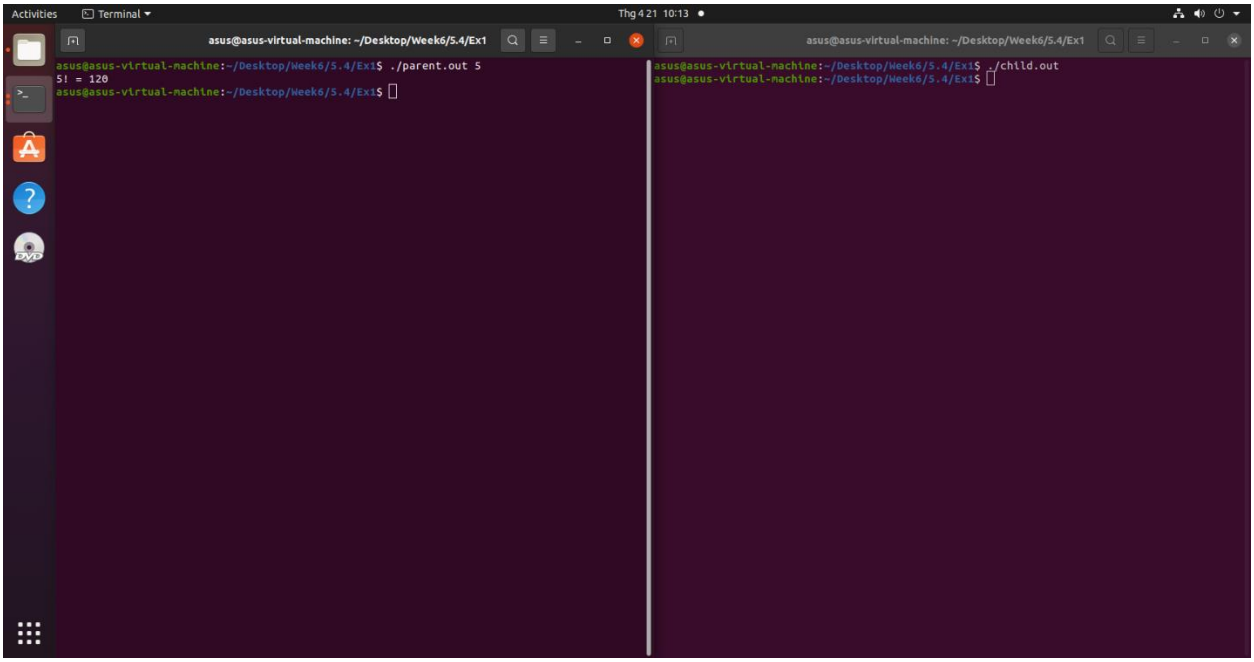




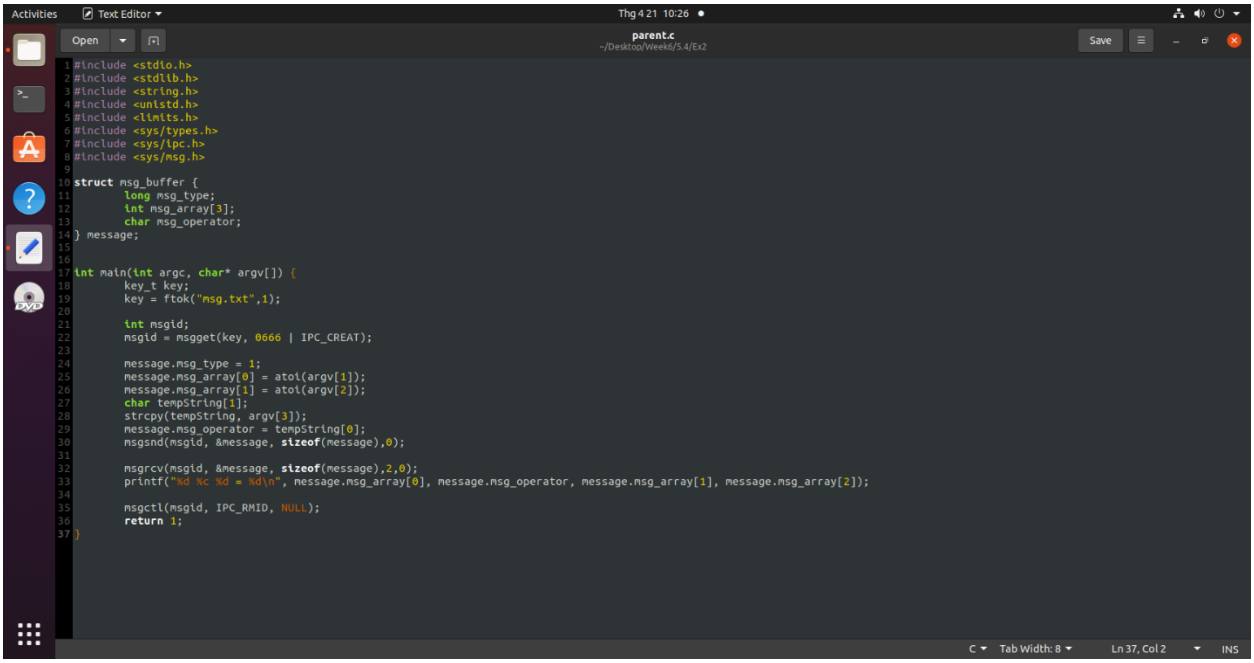

Activities
Terminal
Thg 4 21 10:13
asus@asus-virtual-machine: ~/Desktop/Week6/5.4/Ex1
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex1$ gcc -c parent.c
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex1$ gcc -o parent.out parent.o
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex1$ ./parent.out 5
asus@asus-virtual-machine: ~/Desktop/Week6/5.4/Ex1
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex1$ gcc -c child.c
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex1$ gcc -o child.out child.o
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex1$


Activities
Terminal
Thg 4 21 10:13
asus@asus-virtual-machine: ~/Desktop/Week6/5.4/Ex1
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex1$ gcc -c parent.c
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex1$ gcc -o parent.out parent.o
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex1$ ./parent.out 5
5! = 120
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex1$
asus@asus-virtual-machine: ~/Desktop/Week6/5.4/Ex1
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex1$ gcc -c child.c
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex1$ gcc -o child.out child.o
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex1$ ./child.out
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex1$

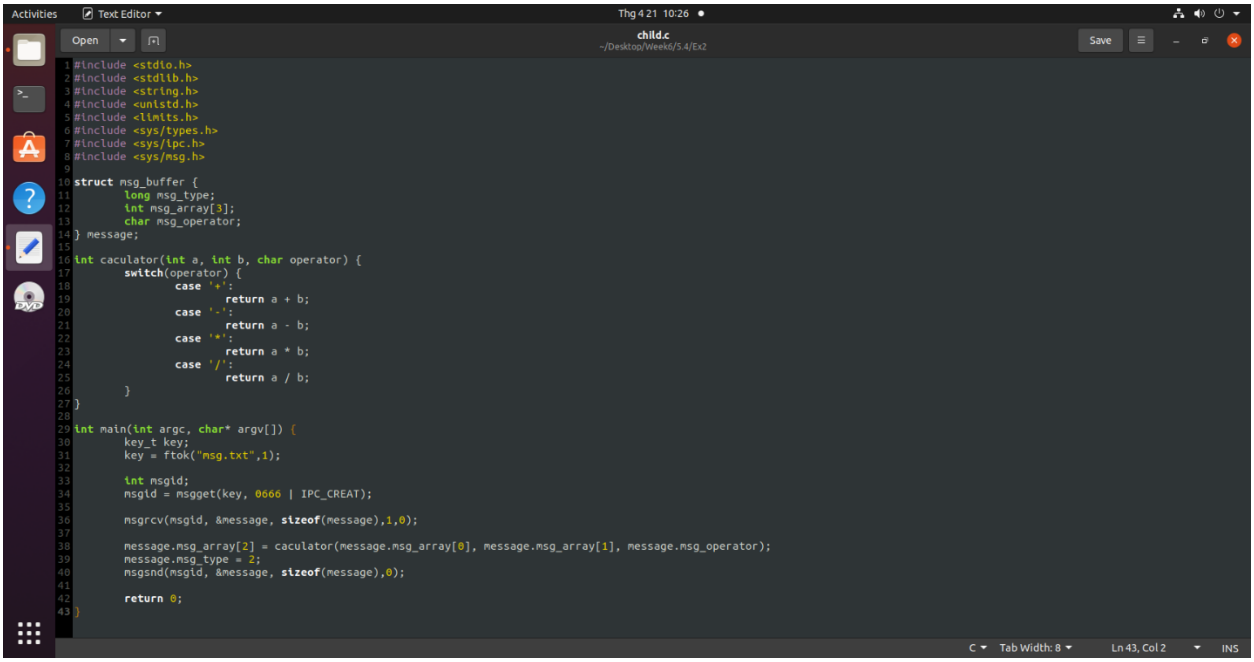

Activities
Terminal
Thg 4 21 10:13
asus@asus-virtual-machine: ~/Desktop/Week6/5.4/Ex1
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex1$
asus@asus-virtual-machine: ~/Desktop/Week6/5.4/Ex1
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex1$ ./child.out


Activities
Terminal
Thg 4 21 10:13
asus@asus-virtual-machine: ~/Desktop/Week6/5.4/Ex1
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex1$ ./parent.out 5
5! = 120
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex1$
asus@asus-virtual-machine: ~/Desktop/Week6/5.4/Ex1
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex1$ ./child.out
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex1$

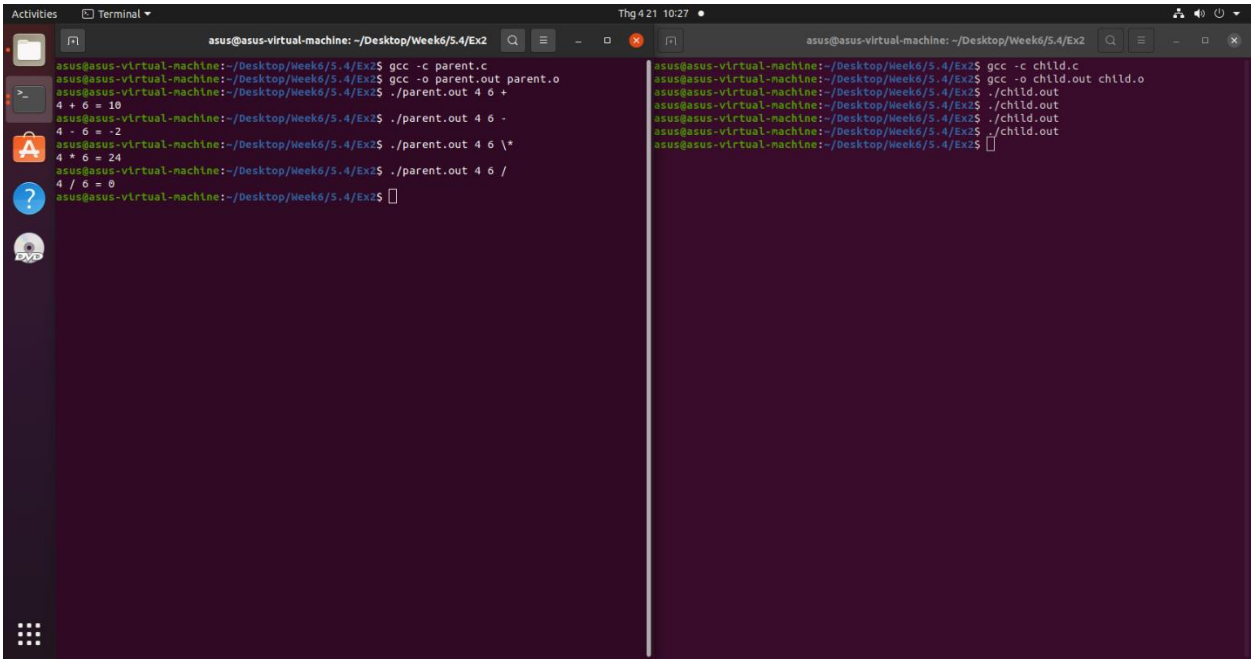
Bài 2:



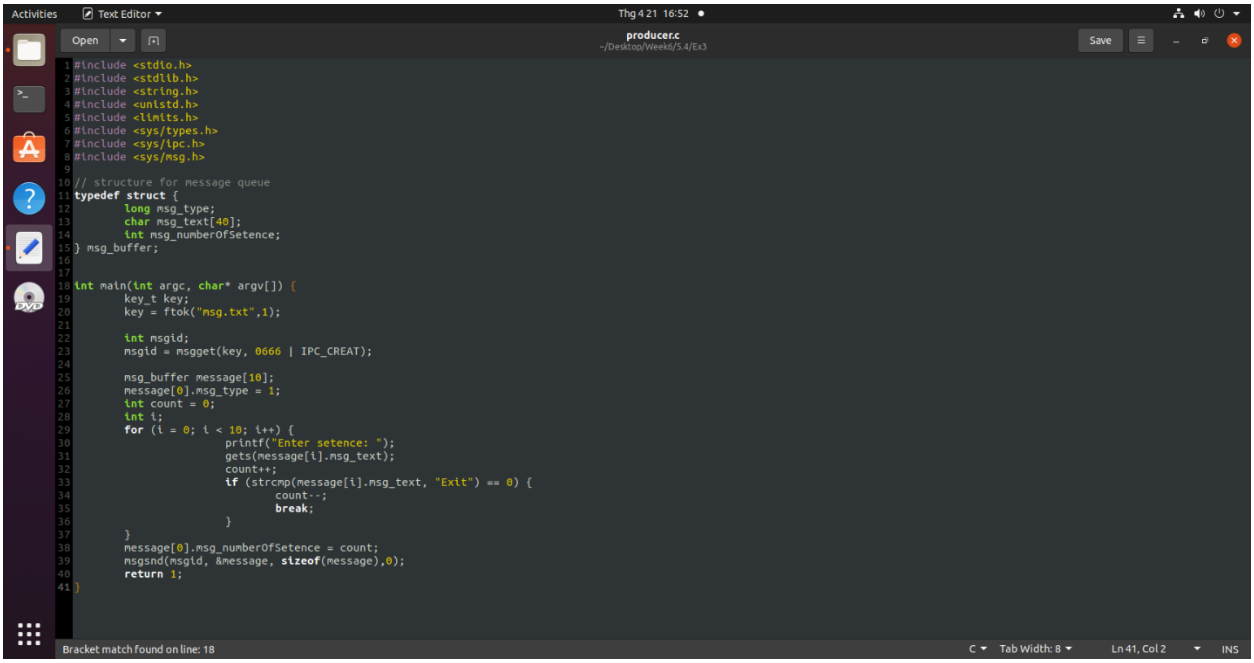

```c
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <unistd.h>
#include <limits.h>
#include <sys/types.h>
#include <sys/ipc.h>
#include <sys/msg.h>

struct msg_buffer {
        long msg_type;
        int msg_array[3];
        char msg_operator;
} message;


int main(int argc, char* argv[]) {
        key_t key;
        key = ftok("msg.txt",1);

        int msgid;
        msgid = msgget(key, 0666 | IPC_CREAT);

        message.msg_type = 1;
        message.msg_array[0] = atoi(argv[1]);
        message.msg_array[1] = atoi(argv[2]);
        char tempString[1];
        strcpy(tempString, argv[3]);
        message.msg_operator = tempString[0];
        msgsnd(msgid, &message, sizeof(message),0);

        msgrcv(msgid, &message, sizeof(message),2,0);
        printf("%d %c %d = %d\n", message.msg_array[0], message.msg_operator, message.msg_array[1], message.msg_array[2]);

        msgctl(msgid, IPC_RMID, NULL);
        return 1;
}
```

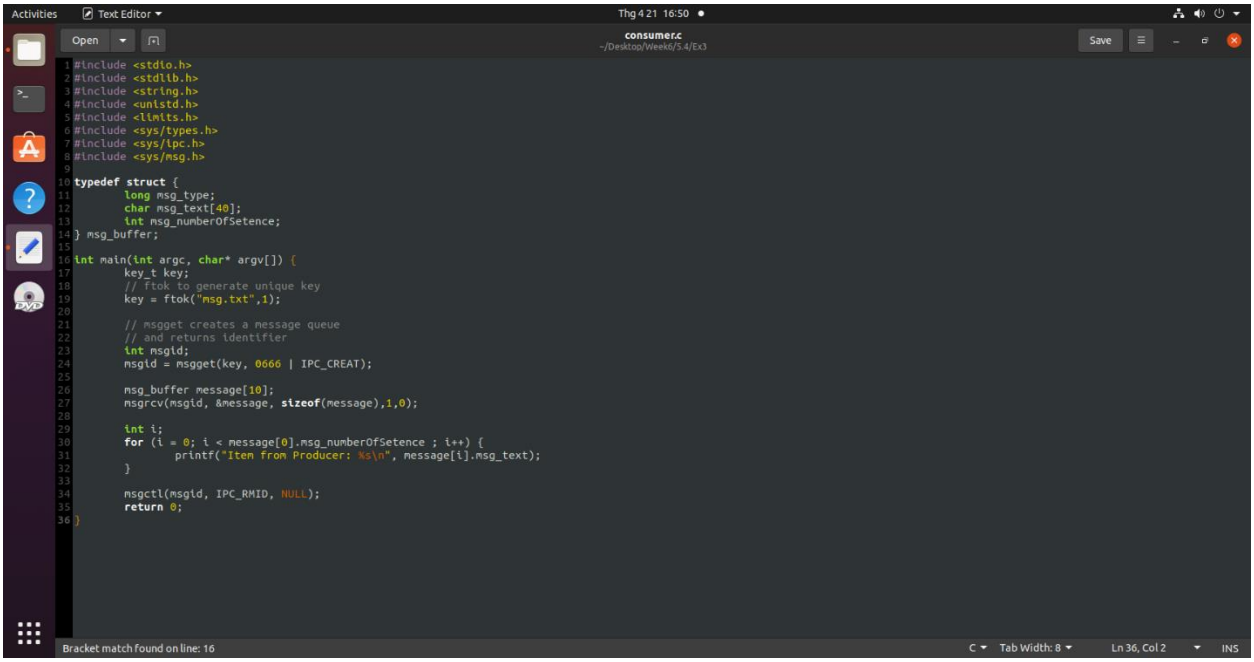


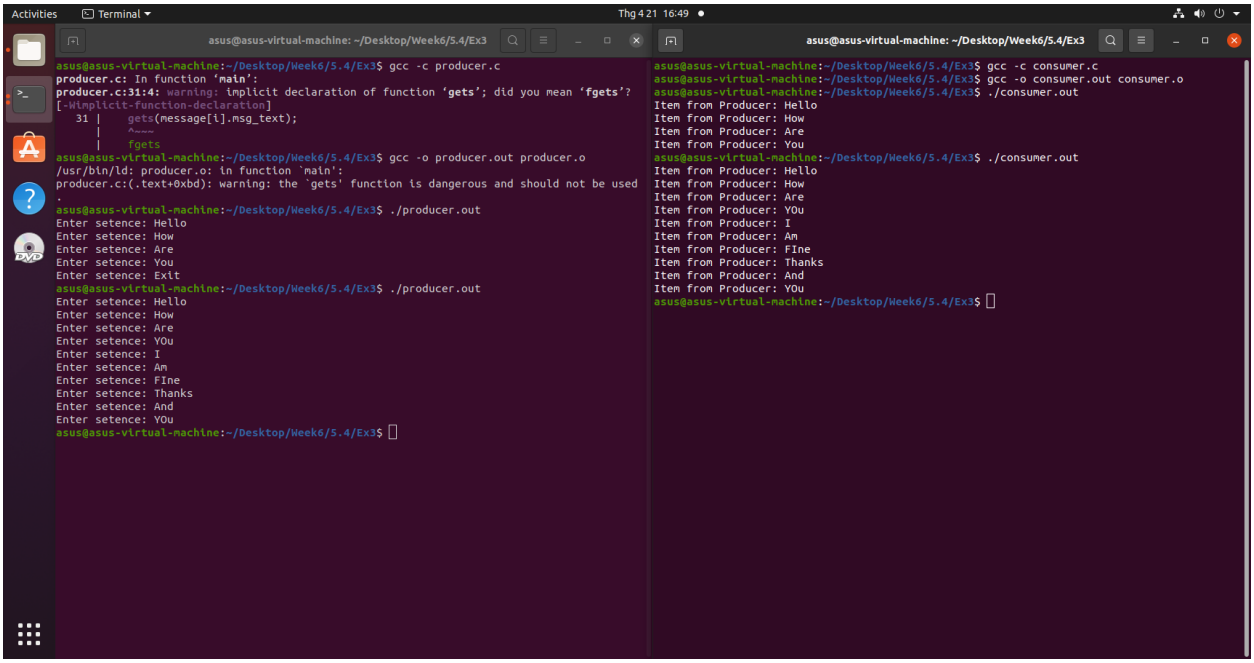

```c
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <unistd.h>
#include <limits.h>
#include <sys/types.h>
#include <sys/ipc.h>
#include <sys/msg.h>

struct msg_buffer {
        long msg_type;
        int msg_array[3];
        char msg_operator;
} message;

int caculator(int a, int b, char operator) {
        switch(operator) {
                case '+':
                        return a + b;
                case '-':
                        return a - b;
                case '*':
                        return a * b;
                case '/':
                        return a / b;
        }
}

int main(int argc, char* argv[]) {
        key_t key;
        key = ftok("msg.txt",1);

        int msgid;
        msgid = msgget(key, 0666 | IPC_CREAT);

        msgrcv(msgid, &message, sizeof(message),1,0);

        message.msg_array[2] = caculator(message.msg_array[0], message.msg_array[1], message.msg_operator);
        message.msg_type = 2;
        msgsnd(msgid, &message, sizeof(message),0);

        return 0;
}
```


Activities
Terminal
Thg 4 21 10:27
asus@asus-virtual-machine: ~/Desktop/Week6/5.4/Ex2
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex2$ gcc -c parent.c
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex2$ gcc -o parent.out parent.o
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex2$ ./parent.out 4 6 +
4 + 6 = 10
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex2$ ./parent.out 4 6 -
4 - 6 = -2
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex2$ ./parent.out 4 6 *
4 * 6 = 24
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex2$ ./parent.out 4 6 /
4 / 6 = 0
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex2$
asus@asus-virtual-machine: ~/Desktop/Week6/5.4/Ex2
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex2$ gcc -c child.c
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex2$ gcc -o child.out child.o
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex2$ ./child.out
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex2$ ./child.out
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex2$ ./child.out
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex2$ ./child.out
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex2$

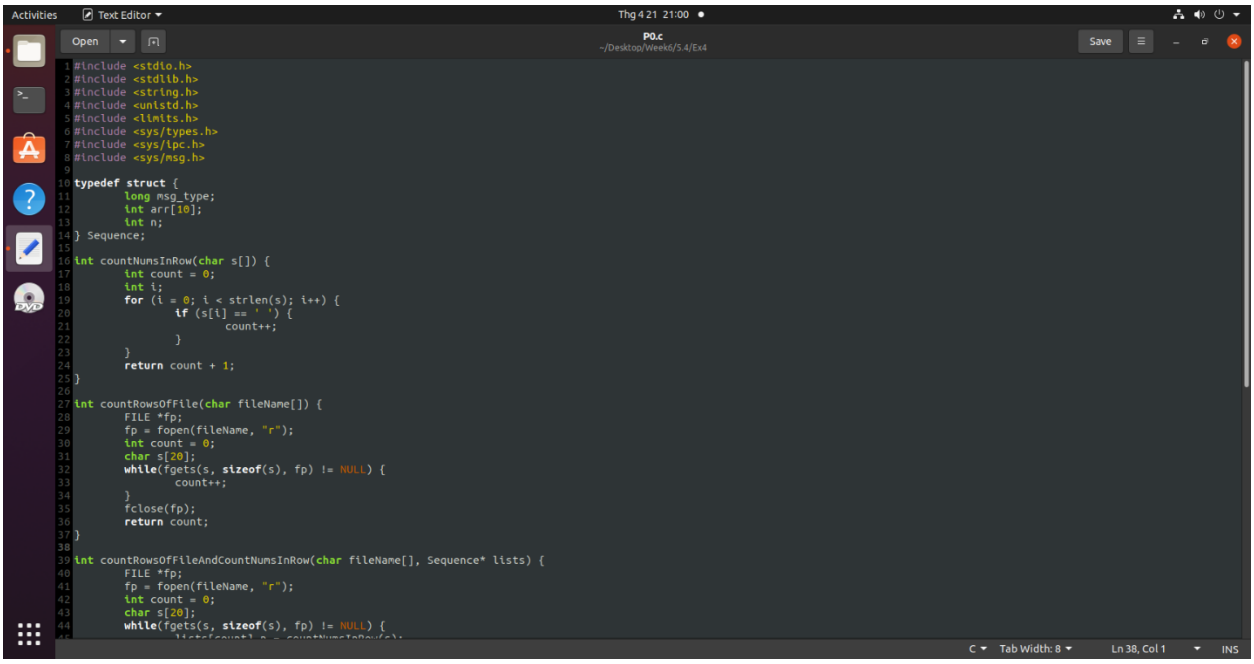
Bài 3:


Activities
Text Editor
Thg 4 21 16:52
Open
producer.c
~/Desktop/Week6/5.4/Ex3
Save
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <unistd.h>
#include <limits.h>
#include <sys/types.h>
#include <sys/ipc.h>
#include <sys/msg.h>
// structure for message queue
typedef struct {
long msg_type;
char msg_text[40];
int msg_numberOfSetence;
} msg_buffer;
int main(int argc, char* argv[]) {
key_t key;
key = ftok("msg.txt",1);
int msgid;
msgid = msgget(key, 0666 | IPC_CREAT);
msg_buffer message[10];
message[0].msg_type = 1;
int count = 0;
int i;
for (i = 0; i < 10; i++) {
printf("Enter setence: ");
gets(message[i].msg_text);
count++;
if (strcmp(message[i].msg_text, "Exit") == 0) {
count--;
break;
}
}
message[0].msg_numberOfSetence = count;
msgsnd(msgid, &message, sizeof(message),0);
return 1;
}
Bracket match found on line: 18
C
Tab Width: 8
Ln 41, Col 2
INS

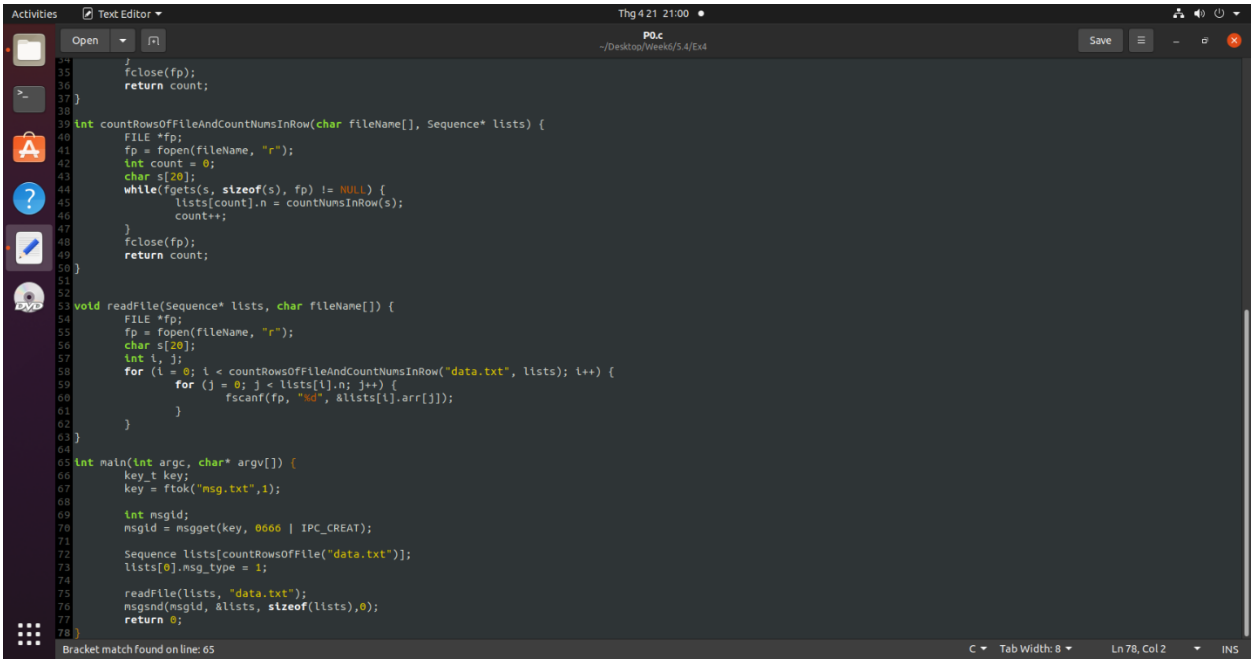

Activities
Text Editor
Thg 4 21 16:50
Open
consumer.c
~/Desktop/Week6/5.4/Ex3
Save
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <unistd.h>
#include <limits.h>
#include <sys/types.h>
#include <sys/ipc.h>
#include <sys/msg.h>
typedef struct {
long msg_type;
char msg_text[40];
int msg_numberOfSetence;
} msg_buffer;
int main(int argc, char* argv[]) {
key_t key;
// ftok to generate unique key
key = ftok("msg.txt",1);
// msgget creates a message queue
// and returns identifier
int msgid;
msgid = msgget(key, 0666 | IPC_CREAT);
msg_buffer message[10];
msgrcv(msgid, &message, sizeof(message),1,0);
int i;
for (i = 0; i < message[0].msg_numberOfSetence ; i++) {
printf("Item from Producer: %s\n", message[i].msg_text);
}
msgctl(msgid, IPC_RMID, NULL);
return 0;
}
Bracket match found on line: 16
C
Tab Width: 8
Ln 36, Col 2
INS


Activities
Terminal
Thg 4 21 16:49
asus@asus-virtual-machine: ~/Desktop/Week6/5.4/Ex3
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex3$ gcc -c producer.c
producer.c: In function 'main':
producer.c:31:4: warning: implicit declaration of function 'gets'; did you mean 'fgets'? [-Wimplicit-function-declaration]
31 | gets(message[i].msg_text);
| ^~~~
| fgets
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex3$ gcc -o producer.out producer.o
/usr/bin/ld: producer.o: in function `main':
producer.c:(.text+0xbd): warning: the `gets' function is dangerous and should not be used.
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex3$ ./producer.out
Enter setence: Hello
Enter setence: How
Enter setence: Are
Enter setence: You
Enter setence: Exit
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex3$ ./producer.out
Enter setence: Hello
Enter setence: How
Enter setence: Are
Enter setence: YOu
Enter setence: I
Enter setence: Am
Enter setence: FIne
Enter setence: Thanks
Enter setence: And
Enter setence: YOu
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex3$
asus@asus-virtual-machine: ~/Desktop/Week6/5.4/Ex3
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex3$ gcc -c consumer.c
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex3$ gcc -o consumer.out consumer.o
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex3$ ./consumer.out
Item from Producer: Hello
Item from Producer: How
Item from Producer: Are
Item from Producer: You
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex3$ ./consumer.out
Item from Producer: Hello
Item from Producer: How
Item from Producer: Are
Item from Producer: YOu
Item from Producer: I
Item from Producer: Am
Item from Producer: FIne
Item from Producer: Thanks
Item from Producer: And
Item from Producer: YOu
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex3$

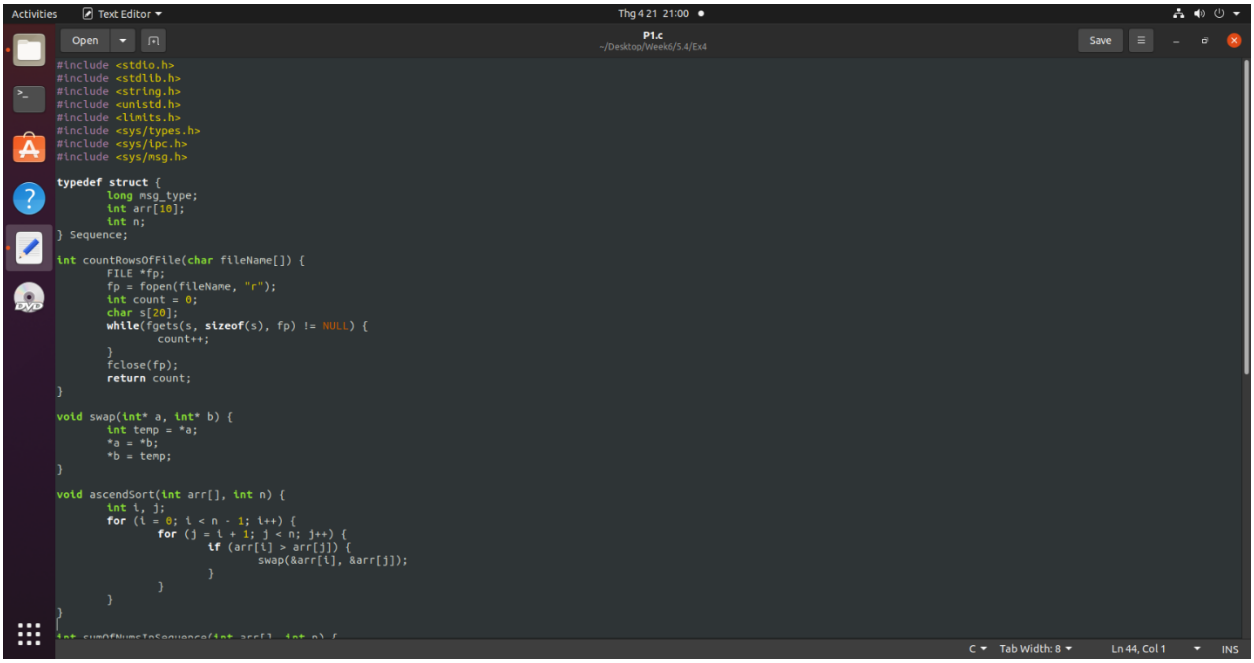
Bài 4:

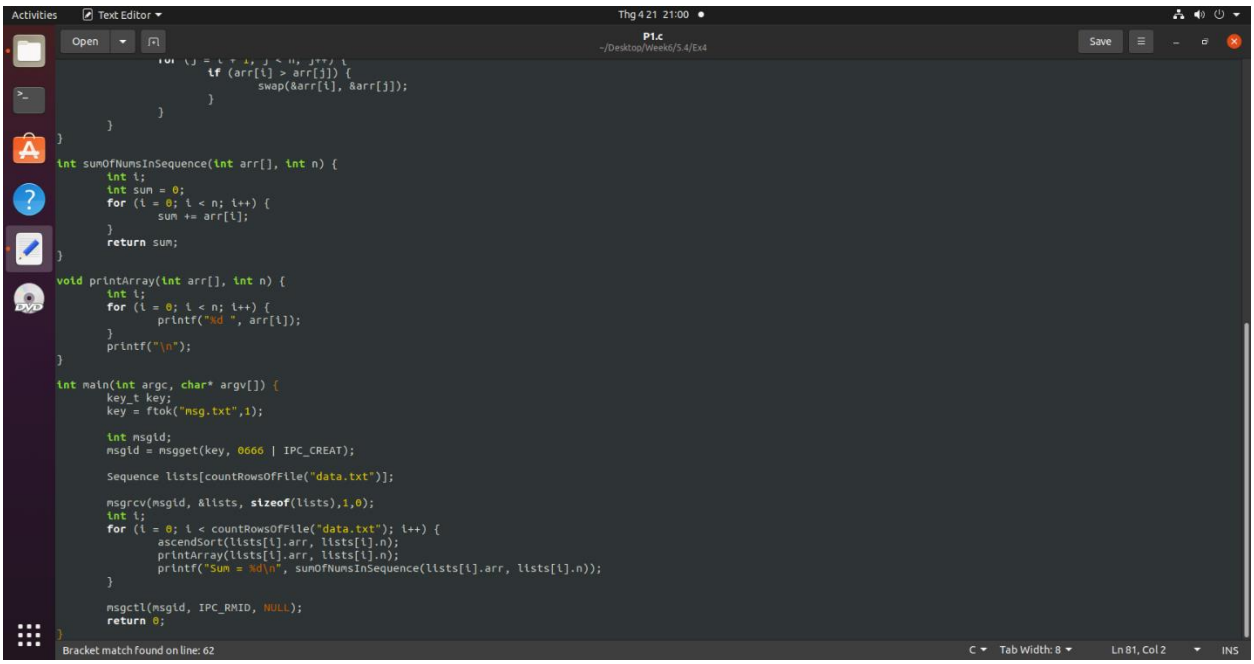


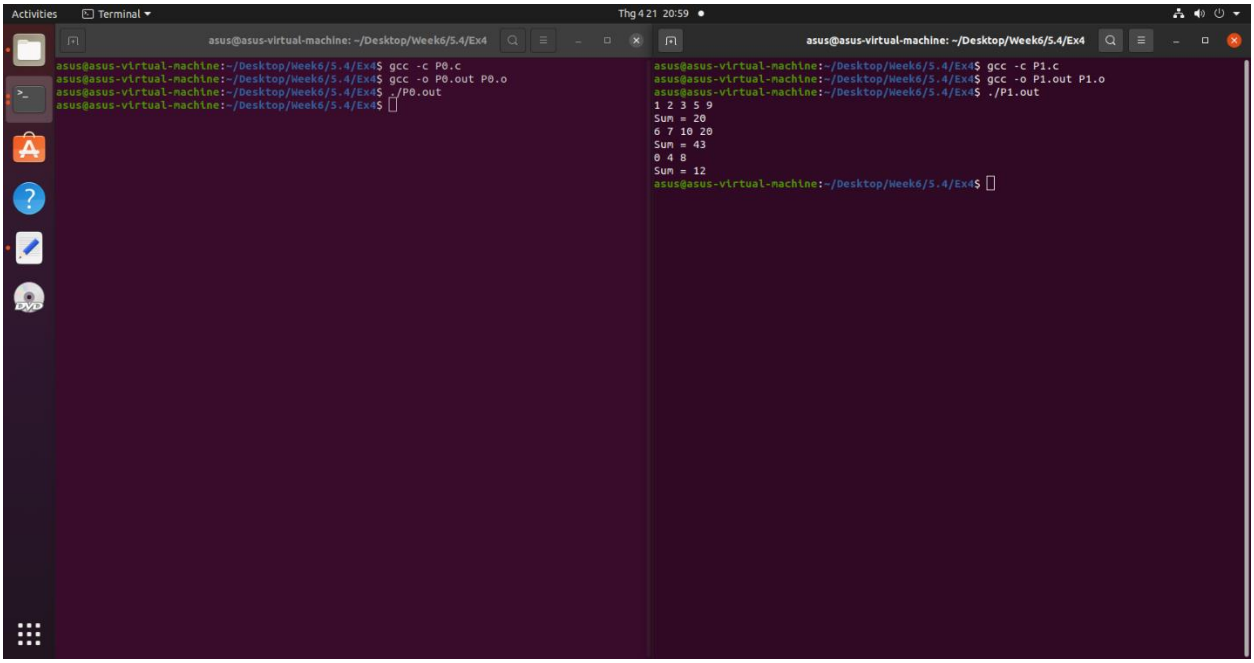

```c
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <unistd.h>
#include <limits.h>
#include <sys/types.h>
#include <sys/ipc.h>
#include <sys/msg.h>

typedef struct {
        long msg_type;
        int arr[10];
        int n;
} Sequence;

int countNumsInRow(char s[]) {
        int count = 0;
        int i;
        for (i = 0; i < strlen(s); i++) {
                if (s[i] == ' ') {
                        count++;
                }
        }
        return count + 1;
}

int countRowsOfFile(char fileName[]) {
        FILE *fp;
        fp = fopen(fileName, "r");
        int count = 0;
        char s[20];
        while(fgets(s, sizeof(s), fp) != NULL) {
                count++;
        }
        fclose(fp);
        return count;
}

int countRowsOfFileAndCountNumsInRow(char fileName[], Sequence* lists) {
        FILE *fp;
        fp = fopen(fileName, "r");
        int count = 0;
        char s[20];
        while(fgets(s, sizeof(s), fp) != NULL) {
```

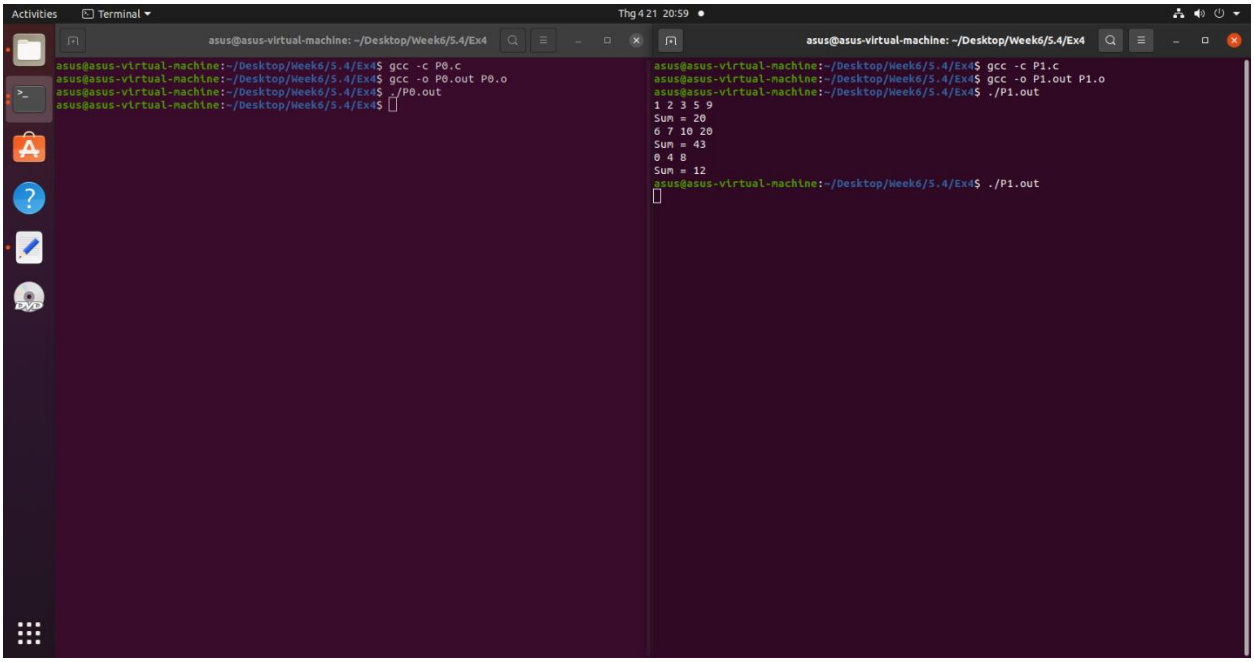


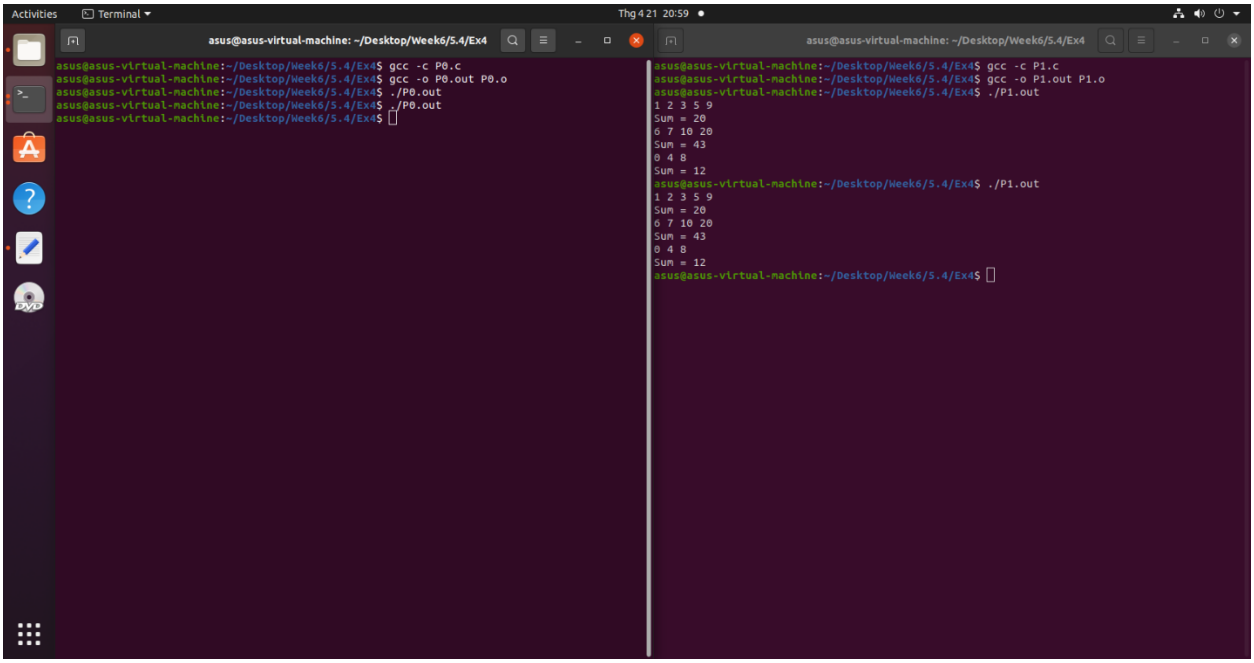

```c
        }
        fclose(fp);
        return count;
}

int countRowsOfFileAndCountNumsInRow(char fileName[], Sequence* lists) {
        FILE *fp;
        fp = fopen(fileName, "r");
        int count = 0;
        char s[20];
        while(fgets(s, sizeof(s), fp) != NULL) {
                lists[count].n = countNumsInRow(s);
                count++;
        }
        fclose(fp);
        return count;
}


void readFile(Sequence* lists, char fileName[]) {
        FILE *fp;
        fp = fopen(fileName, "r");
        char s[20];
        int i, j;
        for (i = 0; i < countRowsOfFileAndCountNumsInRow("data.txt", lists); i++) {
                for (j = 0; j < lists[i].n; j++) {
                        fscanf(fp, "%d", &lists[i].arr[j]);
                }
        }
}

int main(int argc, char* argv[]) {
        key_t key;
        key = ftok("msg.txt",1);

        int msgid;
        msgid = msgget(key, 0666 | IPC_CREAT);

        Sequence lists[countRowsOfFile("data.txt")];
        lists[0].msg_type = 1;

        readFile(lists, "data.txt");
        msgsnd(msgid, &lists, sizeof(lists),0);
        return 0;
}
```

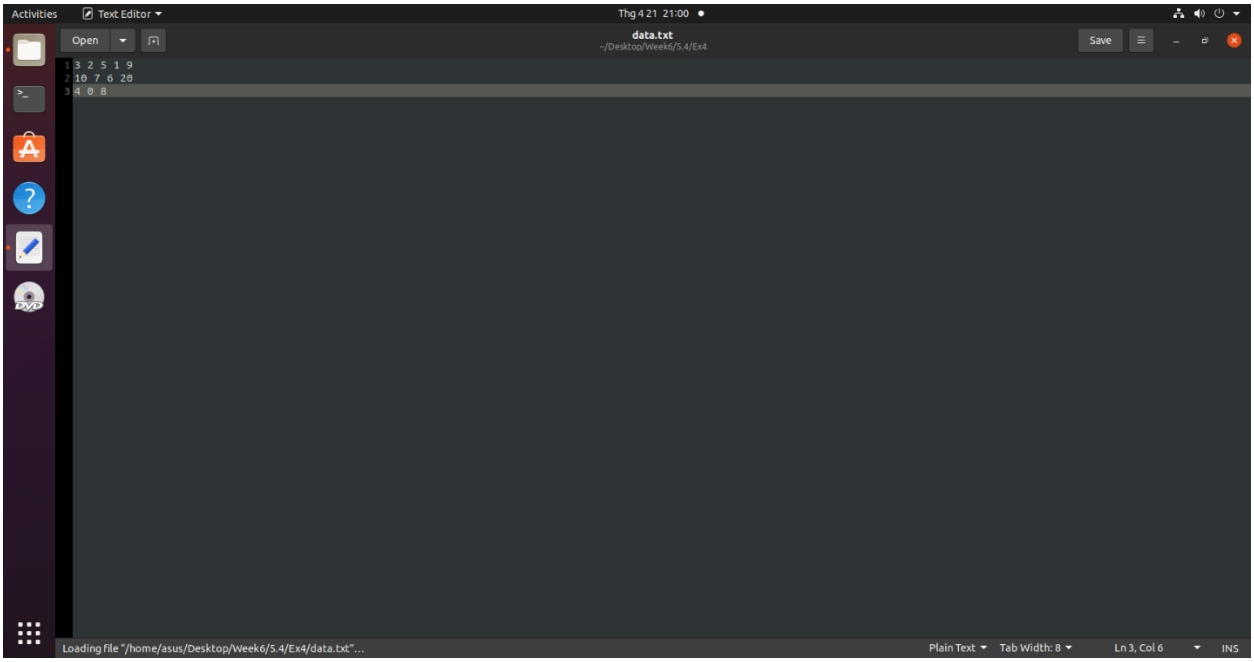

Activities
Text Editor
Thg 4 21 21:00
Open
P1.c
~/Desktop/Week6/5.4/Ex4
Save
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <unistd.h>
#include <limits.h>
#include <sys/types.h>
#include <sys/ipc.h>
#include <sys/msg.h>
typedef struct {
long msg_type;
int arr[10];
int n;
} Sequence;
int countRowsOfFile(char fileName[]) {
FILE *fp;
fp = fopen(fileName, "r");
int count = 0;
char s[20];
while(fgets(s, sizeof(s), fp) != NULL) {
count++;
}
fclose(fp);
return count;
}
void swap(int* a, int* b) {
int temp = *a;
*a = *b;
*b = temp;
}
void ascendSort(int arr[], int n) {
int i, j;
for (i = 0; i < n - 1; i++) {
for (j = i + 1; j < n; j++) {
if (arr[i] > arr[j]) {
swap(&arr[i], &arr[j]);
}
}
}
}
C
Tab Width: 8
Ln 44, Col 1
INS


Activities
Text Editor
Thg 4 21 21:00
Open
P1.c
~/Desktop/Week6/5.4/Ex4
Save
if (arr[i] > arr[j]) {
swap(&arr[i], &arr[j]);
}
}
}
}
int sumOfNumsInSequence(int arr[], int n) {
int i;
int sum = 0;
for (i = 0; i < n; i++) {
sum += arr[i];
}
return sum;
}
void printArray(int arr[], int n) {
int i;
for (i = 0; i < n; i++) {
printf("%d ", arr[i]);
}
printf("\n");
}
int main(int argc, char* argv[]) {
key_t key;
key = ftok("msg.txt",1);
int msgid;
msgid = msgget(key, 0666 | IPC_CREAT);
Sequence lists[countRowsOfFile("data.txt")];
msgrcv(msgid, &lists, sizeof(lists),1,0);
int i;
for (i = 0; i < countRowsOfFile("data.txt"); i++) {
ascendSort(lists[i].arr, lists[i].n);
printArray(lists[i].arr, lists[i].n);
printf("Sum = %d\n", sumOfNumsInSequence(lists[i].arr, lists[i].n));
}
msgctl(msgid, IPC_RMID, NULL);
return 0;
}
Bracket match found on line: 62
C
Tab Width: 8
Ln 81, Col 2
INS


Activities
Terminal
Thg 4 21 20:59
asus@asus-virtual-machine: ~/Desktop/Week6/5.4/Ex4
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$ gcc -c P0.c
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$ gcc -o P0.out P0.o
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$ ./P0.out
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$
asus@asus-virtual-machine: ~/Desktop/Week6/5.4/Ex4
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$ gcc -c P1.c
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$ gcc -o P1.out P1.o
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$ ./P1.out
1 2 3 5 9
Sum = 20
6 7 10 20
Sum = 43
0 4 8
Sum = 12
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$


Activities
Terminal
Thg 4 21 20:59
asus@asus-virtual-machine: ~/Desktop/Week6/5.4/Ex4
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$ gcc -c P0.c
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$ gcc -o P0.out P0.o
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$ ./P0.out
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$
asus@asus-virtual-machine: ~/Desktop/Week6/5.4/Ex4
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$ gcc -c P1.c
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$ gcc -o P1.out P1.o
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$ ./P1.out
1 2 3 5 9
Sum = 20
6 7 10 20
Sum = 43
0 4 8
Sum = 12
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$ ./P1.out


Activities
Terminal
Thg 4 21 20:59
asus@asus-virtual-machine: ~/Desktop/Week6/5.4/Ex4
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$ gcc -c P0.c
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$ gcc -o P0.out P0.o
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$ ./P0.out
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$ ./P0.out
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$
asus@asus-virtual-machine: ~/Desktop/Week6/5.4/Ex4
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$ gcc -c P1.c
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$ gcc -o P1.out P1.o
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$ ./P1.out
1 2 3 5 9
Sum = 20
6 7 10 20
Sum = 43
0 4 8
Sum = 12
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$ ./P1.out
1 2 3 5 9
Sum = 20
6 7 10 20
Sum = 43
0 4 8
Sum = 12
asus@asus-virtual-machine:~/Desktop/Week6/5.4/Ex4$


Activities
Text Editor
Thg 4 21 21:00
Open
data.txt
~/Desktop/Week6/5.4/Ex4
Save
1 3 2 5 1 9
2 10 7 6 20
3 4 0 8
Loading file "/home/asus/Desktop/Week6/5.4/Ex4/data.txt"...
Plain Text
Tab Width: 8
Ln 3, Col 6
INS